A Lecture
ON
CANCER OF THE TONGUE.

DELIVERED AT THE CANCER HOSPITAL, BROMPTON, ON FEBRUARY 12TH, 1913.

BY

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LABORATORY research has so far failed to discover the immediate cause of cancer, though it is generally agreed that some form of irritation is an important factor in starting the changes that evolve in malignancy. These sources of irritation, often obscure, vary from case to case and from organ to organ. But in cancer of the tongue we have a definite group of mediate factors that arrest attention, and these consist primarily in syphilis, and secondarily in the superadded effects of minor irritants. Various figures are given by clinical observers regarding the frequency of syphilitic histories in cases of lingual cancer. To obtain a history or admission of syphilis is not always an easy matter, and the closest inquiry and most tactful cross-examination are often required. Too much reliance must not, therefore, be placed in the correctness of the routine hospital notes, for in many cases the patient has either forgotten the past trouble or has attached no importance to it, and one is apt to overlook the fact that not infrequently the primary sore and concurrent symptoms may disappear after a comparatively short course of treatment, and the disease may lie dormant only to break out in less tractable forms many years afterwards.

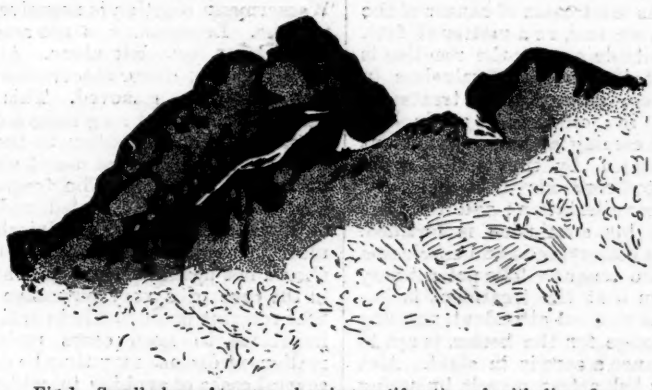

Fig. 1.—Small ulcer of tongue, showing proliferation of epithelium down into fissure. Enormous round-cell infiltration. Islets of epithelium on base of ulcer.

Histories obtained from women, too, are often most unreliable, for they may have been unaware of the nature of the disease, although they have been treated for actual manifestations. Here the tale of repeated miscarriages may be the only suspicious information available. Some years ago I collected figures of the history of syphilis in cases of cancer of the tongue under my care. It worked out at over 80 per cent., and seems to be conclusive as to the intimate association of the two diseases. It was held by neurologists—an opinion that in view of recent investigations has almost become a certainty—that without syphilis there would be no tabes. I should not care to go so far as to say that without syphilis there would be no cancer of the tongue; but certainly if there were no syphilis the numbers of the latter would be vastly diminished. This opinion has been forced on me as the outcome of clinical observation on the cases I have seen during several years at the Cancer and the Lock Hospitals.

Lingual cancer is a common sequela of syphilis, more common than locomotor ataxia and much more selective than the latter of the male sex. Its frequency with regard to sex is as 8 to 1, whilst the incidence of syphilis alone, judging from our experience at the Lock Hospital, might roughly be considered as ten times more common in males than in females.

How is it that there is such a striking relationship between syphilis and cancer of the tongue? Syphilitic lesions of the tongue are of very frequent occurrence, and they lower the resisting power of the organ, rendering it vulnerable to irritation of all kinds. The primary sore may occasionally be found there, mucous plaques of the secondary stage are by no means uncommon, but it is specially to the later or tertiary lesions that dangerous sequelae ensue. These tertiary lesions occur not only in cases of neglected or insufficient treatment, but also where the most rigid mercurial treatment has been carried out. By no means do all cases of syphilis even obstinate or very chronic, exhibit tongue lesions, and women appear to be peculiarly exempt from them. Why should this be so? There must be some connecting link between the primary infection and such lesions, and that connecting link is long-continued irritation. Correlated with the high percentage of syphilis in the histories you will find that an equally large number have been smokers and very heavy smokers. To a person in normal health tobacco smoking is not a source of irritation of the tongue, and much as I should sympathize with a patient deprived of the solace of "my Lady Nicotine," I am convinced that were the use of tobacco discontinued from the onset of symptoms of syphilis until when, after thorough treatment, the Wassermann reaction is and remains negative, tertiary manifestations in the tongue would almost cease to exist, and cancer of the tongue would be amongst the rarities of our experience. Alcohol has come in for a good deal of abuse (and I use the word "abuse" in all its senses), and though when taken to excess it intensifies the evils of syphilis yet it is of little moment in determining these chronic lesions. Thus we have syphilis as the primary factor in producing vulnerability of the tongue, and tobacco further acting as an irritant on the abnormal organ, with the resulting production of chronic lesions that in themselves are to be regarded as, and indeed are generally nothing else than, precancerous conditions.

As the result of long-continued irritation there is first a thickening of the surface epithelium, perhaps in more places than one, producing the white patches that characterize "smoker's tongue." At first pearly grey in colour, they become denser and more pronounced as the result of further irritation. The cornification of the epithelium progresses. In the course of time it spreads over the tongue, the epithelium and papillae at some parts concurrently atrophying and giving rise to bald, smooth areas amidst the thickening epithelium. Deeper in the tongue other changes are going on. There is round-cell infiltration beneath the mucous membrane, and the accompanying or subsequent cicatrization interferes with the vascular supply, producing the bald areas, and leads to puckering and fissuring of the surface. We see the surface of the tongue irregularly broken up with these fissures. Débris collects here and ulceration ensues. Unlike the normal organ, such a tongue is very irritable—irritable to the roughness of tartar or the edge of a dental plate. Smoking, spirit drinking, and hot condiments add to the irritation. Such a tongue is a source of danger, but the patient, becoming accustomed to minor annoyances, grows callous on the onset of ulceration, ready to endure, as best he can, his unfortunate lot. When fresh trouble breaks out—trouble which may be very serious—he pays little attention to it at first. If it be cancer, as it may quite well be, the cancerous ulcer, for some considerable time after its onset, not infrequently produces less pain and inconvenience than an ulcerated fissure or some other non-malignant lesion associated with chronic syphilitic glossitis. It is the old tale—familiarity breeds contempt.

Growing into the fissures, the epithelium dips down into a tissue robbed of resisting power, where it may take on malignant proliferating character (Fig. 1). Cancer once started tends quickly to extend to the deeper parts of the tongue, spreading out as it penetrates, its surface extent hiding its wider prolongations beneath (Fig. 2). The lymphatic glands become early infected, and, owing to the free anastomosis of lymphatic channels in the substance of the tongue, the lymph glands on both sides

of the neck are apt to be involved. It often happens that enlarged glands are found on the side opposite to the primary lesion. As the lingual growth advances, the tongue becomes more and more fixed, the loss of mobility renders articulation painful and difficult, swallowing is a matter of great difficulty, and saliva dribbles from the mouth. The increase in the size of the tongue may interfere with mastication and even with the closing of the mouth. The foul cancerous mass cannot be kept clean and the teeth cannot be brushed. Usually there is very considerable pain and the necessity of taking nourishment becomes a penance. The condition of such a patient is harrowing; not only is he a pitiable object to his friends, but he is an offensive nuisance to those called upon to attend him.

Fig. 2.—Cross section through a cancer of tongue to show small superficial ulcer and deep-spreading involvement of the muscles.

Diagnosis.

An early diagnosis of all forms of malignant disease is important, and in no situation more so than in the tongue, because of the great rapidity with which it spreads. When any doubt exists as to a particular lesion, the part ought promptly to be excised and examined microscopically. Valuable time should not be wasted in attempting to solve the nature of the trouble by the Wassermann reaction or by therapeutic tests. A positive Wassermann reaction proves only the presence of the syphilitic taint, and does not exclude carcinoma; and as most cases of cancer of the tongue supervene on syphilis, we find, as a matter of fact, that where there is an indubitable cancer the reaction is very frequently positive. It is, therefore, valueless in this case. Unfortunately, too, antisyphilitic treatment is too often resorted to in order to settle the diagnosis. The practitioner coming across a suspicious lesion, and perhaps influenced by the admission of previous syphilis, is apt to conclude that it may, after all, be only a tertiary manifestation; and if it does show signs of improvement, his conclusion is fortified. He loses sight of the fact that both syphilis and carcinoma not infrequently coexist in the tongue. The patient may probably express the opinion that the treatment is improving the condition, and his medical attendant, noticing himself the unmistakable change for the better, is apt to conclude that with perseverance a cure is in sight. Alas for fond hopes! I have been led astray myself by seeing a large lesion of the tongue apparently clearing up under iodides, only to wake up to the fact that it was a case of epithelioma grafted on to a large syphilitic ulcer, and that while the latter was cicatrizing and healing the former had been growing apace. My experience is that practically all epitheliomas of the tongue become cleaner and appear to undergo a change for the better under iodides, and more especially so after an injection of salvarsan.

Whether we shall have a sero-diagnostic method for cancer is a question for the future, but until it arrives and proves to be reliable my advice is, waste not a day, but have a portion excised and submitted to a pathologist. It cannot be resorted to too early. If the suspicious lesion is small, it can be wholly excised, but where it is comparatively large a portion from the edge of the most suspicious part should be removed, but it must be of sufficient size and, above all, of a good depth. Shavings are useless to the pathologist.

Cancer of the tongue is generally developed after the age of 40. The most common situation is the margin of the tongue, sometimes the dorsum, and occasionally the tip. Most of the lesions are in the anterior two-thirds. Sometimes the frenum and floor of the mouth are the sites of the origin. Usually there is concurrent evidence of syphilitic glossitis. When epithelioma occurs on the dorsum it arises frequently in a breaking-down gumma.

Epithelioma commences in a variety of abnormal conditions, such as in a wart, a fissure, a chronic ulcer, nodule, etc., and it is obvious that under these conditions it has no definite characteristic feature. Only the microscope will reveal the malignant change. But when well established, there are two main forms in which it manifests itself, the ulcerating form and the pseudo-papillomatous form. The ulcer is an indurated infiltrating sore with raised and sometimes undermined edges and very hard base; in its early stages, when it occurs in a fissure, it has no peculiar characteristics beyond that of an ulcer that refuses to heal, with perhaps a slight suspicion of infiltration. The pseudo-papillomatous form is characterized by the appearance of a slight raised flat patch of crowded warts; and though in its early stages, at least, it may be less infiltrating than the ulcerating type, yet it is hard and indurated. The lesions that may cause difficulty in diagnosis are simple ulcers and breaking down gummata. In the case of the former there will be evidence of irritation from the sharp edge of a tooth or a stump, and the induration and infiltration that characterize a carcinoma will be absent. A breaking down gumma is generally found in the dorsum of the tongue, and is characterized by a very deep, almost punched out, ulcer with marked induration but with a septic, sloughing base. Great stress is laid on the tuberculous ulcer in the text-books. It is, as a matter of fact, exceedingly rare, is generally far back on the tongue, and is invariably secondary to tuberculosis elsewhere.

Treatment.

(*a*) *Preventive.*—As I have already pointed out, tobacco is dangerous in all cases of syphilis, and its use ought to be prohibited, in my opinion, in every case of syphilis, and certainly on the slightest appearance of leucoplakia of the tongue. Syphilitic lesions of the tongue should have thorough treatment, and are most successfully dealt with by the combined administration of calomel and salvarsan injections. Treatment should be continued until the Wassermann reaction is negative and remains so after six months. Leucoplakia is not amenable to treatment, and is, perhaps, best left alone. All chronic tertiary lesions should be kept under observation and all sources of irritation should be removed. This entails the removal of carious stumps and rough edges of teeth, careful brushing of the teeth, and attention to the general hygiene of the mouth. The prolonged use of strong, stimulating applications is a mistake. The frequent application of some bland antiseptic is indicated, and boroglyceride is as good as anything else. It is advisable to excise any chronic ulcer or papilloma that refuses to yield to treatment. I should not hesitate to recommend excision of the tongue in the case of a very extensive chronic syphilitic lesion that remains unamenable to antisyphilitic remedies. It is important to keep cases under observation, as early malignant disease may thus be detected. I have watched several cases of syphilis in which malignancy has supervened and has been discovered at an early stage.

(*b*) *Radical.*—The spread of the disease is always more extensive than clinical examination would lead one to believe. The glands are early involved. The situation of the primary focus does not determine the particular chain of glands or even the particular side that may first be involved. Deviation of the tongue on protrusion or impaired mobility is a sign of the spread of the disease, though unimpaired mobility is no guide as to the extent. My last case, for example, had no impairment of mobility, yet the spread was very extensive. Enlargement of the glands in the neck always adds seriously to the outlook, but I do not regard the enlargement of the submental glands with the same amount of gravity as I do those of the carotid group. In all cases it is necessary to remove the lymphatics, fat, and fascia in the anterior triangle on both sides of the neck. The complete removal of the tongue, together with the dissection of the neck on both sides, entails a very serious operation, attended by shock, and we are compelled, much against our ideas, to do the operation at two sittings, removal of the tongue and dissection of one side of the neck being done on the first occasion, and the other side of the neck being cleared out at a subsequent operation. It is a matter of difficulty to obtain a patient's consent to a subsequent removal of glands from the side of the neck not apparently involved, but I have seen patients who refused the double operation return later with involved glands on the untouched side.

I always advise complete excision of the tongue. Where the lesion is very minute a very wide removal might suffice, but the larger operation even then would be more ideal. With an incision carried from behind the angle of the jaw along the anterior border of the sterno-mastoid to opposite the sterno-clavicular articulation, and

another from beneath the tip of the chin to meet this at right angles, the anterior triangle is first cleared of the fascia, fat, and lymphatic glands belonging to the submental, submaxillary, inferior parotid, and carotid groups, taking care to prevent tearing of these glands, as otherwise cancer implantation followed by recurrent nodules, or, more frequently, widespread and rapid malignant induration of the whole side of the neck, might result. Drainage tubes are inserted before closing this wound, to remove blood-stained exudation or secretion from any of the salivary glands, or in case a communication be accidentally made with the oral cavity. Thereafter the mucous membrane of the floor of the mouth and the fraenum is divided, allowing of the tongue being pulled forward and the lingual arteries ligatured. The tongue is divided transversely as far back as possible and the mucous membrane of the floor of the mouth sutured over the stump. Preliminary laryngotomy is quite unnecessary, and is not adopted by us. The modified Trendelenburg position in which the patient is put at operation prevents blood entering the trachea. The patient is propped up in bed as soon as is possible; mucus is removed by swabbing; and nourishment is given by means of a rubber tube placed on the spout of a feeding cup and passed well into the pharynx, where swallowing is entirely a reflex action. As the healing of the wound progresses the patient is able to drink out of a cup. He is supplied with a writing block, and is forbidden to make attempts at speech. Gradually the scar tissue disappears and mobility of the floor of the mouth and the stump becomes restored, so that after the lapse of a fortnight articulation is possible and improves with time, finally approaching so near the normal that the uninitiated might not detect the loss of the tongue. You will hear from one of the patients here to-day, whose tongue I removed for cancer fifteen years ago, how perfect is this articulation. For the first week after excision of the tongue, partly as a result of the operation and partly from the enforced silence, the patient is apt to become very depressed, and I always advise getting him out of bed as soon as possible to sit in an armchair, as this cheers him up.

(*c*) *Palliative.*—In those cases which are beyond the stage of operation, where their life becomes a burden to them and their sufferings grow more acute, can nothing be done? I strongly advise removal of the tongue where it is possible, even when there is no hope of cure owing to the widespread glandular involvement. In many cases it may be removed even when the disease is far advanced, and with the aid of the cautery any suspicious foci of recrudescence can be attacked and the condition rendered vastly more satisfactory than if the disease had been allowed to pursue its course unchecked. Unless something is done to alleviate the patient's condition terrible suffering has to be endured. For a considerable time I have been endeavouring to carry out some sort of starvation treatment of the growth by avascularizing the part. The fact that the tongue is a fairly well isolated organ with a definite blood supply coming from the two lingual arteries seemed to hold out the hope that by ligation of these vessels avascularization would result, but I found that, owing to the free anastomosis between the various branches of the external carotid arteries, such a proceeding was attended with but little success. Further attempts by tying the external carotids did not give any better results, and it is, in fact, impossible by mere ligation to cut off the blood supply anywhere in the carotid area. Dawban suggested the injection of the vessels with a paraffin preparation of a melting point somewhat higher than body temperature. This I have adopted on several occasions. The method indubitably accomplishes more complete avascularization than ordinary ligation. It causes shrinking of the part, the ulceration becomes less foul, contrary to what one would expect, but the great benefit derived from it is the marked alleviation of pain. In one case, where there was extensive recurrence in the stump of the tongue and the floor of the mouth and where the disease had spread to the anterior pillar of the fauces and the right side of the pharynx, the whole affected area cicatrized over and the disease seemed to have disappeared. It, however, recurred on the side of the pharynx a year afterwards. I cannot recommend paraffin injections as a routine method, as they appear to be not wholly free from risk.

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CONCLUSIONS.

The lessons to be learnt are: Wide removal in definite epithelioma; microscopic examination of suspicious lesions; the avoidance of tobacco by those who have syphilitic lesions of the tongue; and radical treatment of all syphilitics till serologically they are pronounced free.

The thorough treatment of syphilis would wellnigh abolish cancer of the tongue.

ENUCLEATION OF TONSILS AND REMOVAL OF ADENOIDS UNDER GAS ANAESTHESIA.*

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By enucleation of the tonsil I mean the complete removal of the circumscribed mass of lymphatic tissue lying between the anterior and posterior faucial pillars, together with its capsule.

The earlier operations on the tonsils were directed chiefly towards the removal of the redundant mass of tissue which projected beyond the pillars of the fauces, leaving the tonsillar base and capsule *in situ*. Such tonsils gave rise to some mechanical obstruction, associated with occasional inflammatory attacks, and these constituted the indications for their amputation.

With the evolution of the view, as to the part played by the tonsils as a path of entry for local and systemic infections, came more vigorous attempts at their removal as a whole, greater importance being attached to septicity than to size. These attempts were more or less successful, but no surgeon could state with any degree of tolerable certainty, when about to operate, that he would be able to remove the gland with its capsule completely, except in a limited number of medium-sized, compact, and firm tonsils, until the method of enucleation by dissection was introduced.

This method is a certain and efficient one, and in the hands of its advocates has been used frequently to enucleate the portion of the glands which the older method failed to remove, and with decided benefit to the patients.

Any operator with a fair degree of dexterity can soon master either or all of the various types of technique used in this method, but there are certain essentials of the operation which stand in the way of its popularity. This applies particularly to the depth of chloroform anaesthesia required, which is always a source of anxiety to surgeon and anaesthetist; and, indeed, many of the latter dislike pushing the anaesthetic to such a degree. Partly on account of this difficulty with the anaesthetic, and at the same time recognizing the value of complete removal, surgeons have latterly turned their attention to perfecting some method of enucleation by tonsillotomes.

To Greenfield Sluder of St. Louis belongs, I believe, the credit of having first originated the idea of applying the tonsillotome by its outer aspect to the tonsil, whilst laying special emphasis on the sliding of the tonsil on to the alveolar projection of the lower jaw, to facilitate pushing the gland through the ring of the instrument. Sluder's idea has been considerably modified by some surgeons in this country, notably Pybus and Whillis of Newcastle and Peters of London. The points which, in my opinion, are of most importance, and my reasons for specially emphasizing some of them, will probably be best conveyed by giving a description of the whole of the method and the technique which I adopt at the Evelina Hospital for Children, where an average of about thirty cases in a morning have to be operated on.

1. *Preparation of the Patient.*

If the patient has any decayed teeth the help of the dentist is sought to get the mouth into good condition. It is obviously bad surgery to operate in the presence of manifest sepsis, in the absence of urgency. The bowels are cleared out the day previous to operation, and on the

* Read before the Dartford Division of the British Medical Association.

morning of the operation no solid food is given—in fact, the usual preparation for a general anaesthetic. The following mixture is given one day before the operation and continued for six days after:

℞	Sodae salicyl. Potass. bicarb. Potass. chlor.	...	...	āā gr. x
	Elixir aromat. (B.P.C.)	...	...	♏ xx
	Aq. chlorof. ...	...	...	... ʒ jss

This is the strength of a stock mixture. The dose is as follows: Under 6 years of age, 1 drachm; from 6 to 12 years, 2 drachms. It is given for its local and general antiseptic action, and to counteract any septic absorption from the raw tonsillar bed and naso-pharynx. This treatment has arisen out of the view that acute rheumatism is a type of systemic infection of tonsillar origin. Potassium chlorate enjoys a wide reputation as an excellent drug in the treatment of unhealthy conditions of mucous membranes. When taken internally it is said to be excreted by the saliva, and in this way can exert its local action on the throat after operation. For the idea of this useful combination I am indebted to my friend Mr. Somerville Hastings.

2. *Position of the Operating Table.*

This is of considerable importance to ensure good light. I have tried the various forms of head lights, and discarded them one after the other as unsatisfactory, and only to be used in the absence of daylight. The table is placed lengthwise, parallel to the window, and the operator stands between the two. A good light and full view of both tonsils are absolutely essential to enable the surgeon to enucleate completely, and avoid injuring the uvula and faucial pillars. The table shown in Fig. 1 has two hinged

Fig. 1.

basins, fitted one on either side near the top, and when not in use they swing under the table. The basin next to the operator is for the purpose of receiving the blood. It also receives the water used in cleaning the patient's face. The basin on the opposite side contains ice-cold water and sponges to apply to the patient's face when the operation is completed.

This simple device limits the range of blood-splashing so common during these operations, and is far more effective and cleanly than a pail or tray of sawdust placed on the floor. The table should not be higher than the tip of the great trochanter of the surgeon, or he will find his movements restrained during the operation.

3. *Position of the Patient.*

The patient is placed on his back on the table with his right side to the window, and resting on the specially constructed sand pillow seen in Fig. 1. This pillow, though not an essential, as any pillow measuring about 12 to 14 in. square by 1½ in. thick will do quite well, enables the operation to be done with greater comfort and speed, as it guides the nurse who assists to the exact position in which to keep the patient. It is, therefore, especially useful when doing a large series of cases.

The shoulders rest on S, the occiput at O, and the right cheek against the process A, with the face partially turned to the window and the operator. When the tonsils are removed the patient is turned on to the right side for the removal of the adenoids. The right cheek now rests flat on the process A, and the right shoulder fits into the notch N. This gives fixity and stability to the position of the patient, and enables the operator to manipulate with a greater degree of precision when removing the adenoids. The nurse must hold the patient's arms well down along the sides to depress the shoulders below the level of the chin.

4. *Gag.*

I use a modified Doyen's gag, made for me by the Holborn Surgical Company; it answers the purpose well. Its flanges are applied to the lateral teeth and not to the incisors. This enables the operator to bring the adenoid curette out in an abrupt curve, and sweep the growths cleanly away. There is less risk of slipping down the naso-pharynx with the cutting edge, and consequently less danger of leaving tags or removing mucous membrane than if the blade of a gag is resting against the upper incisor teeth.

5. *Anaesthesia.*

At the Evelina Hospital I use nitrous oxide gas anaesthesia with air in all cases of enucleation of tonsils and removal of adenoids. When skilfully administered it gives ample time to complete the operation efficiently. The enucleation of each tonsil takes four to five seconds, and the removal of adenoids fifteen to twenty seconds—in all less than half a minute.

I do not propose to discuss the merits of the various anaesthetics in use for this operation, and therefore desire at this point to remove any impression which the title of this article may convey as to my being an advocate of gas anaesthesia exclusively. My purpose is merely to state that, in my opinion, with a properly modified tonsillotome and careful technique, tonsils can be enucleated as completely as it is possible by any other method, even under such short anaesthesia as gas affords.

I do, however, wish to add that, personally, I like a longer anaesthetic than gas, and particularly when doing isolated cases and working with strange assistants. A hypodermic injection of morphine and atropine given three-quarters of an hour to an hour before the operation adds considerably to the after comfort of the patient. In children $\frac{1}{40}$ grain of morphine and $\frac{1}{150}$ grain of atropine is sufficient to ensure a good night's rest following the removal of tonsils and adenoids. In private I find that it is an excellent addition to the general anaesthetic and can be used to advantage, but in a large out-patient department at a hospital it is difficult to carry out.

6. *Tonsillectome.*

As this instrument is used exclusively for enucleation, I propose in future to refer to it as the *tonsillectome*. The instrument which I find most satisfactory is a modification of one designed by Ballenger of Chicago for Sluder's method, made for me by the Holborn Surgical Company (Fig. 2). In the original instrument the handle was set at a very acute angle to the shaft and blade, and was chiefly intended for use on patients in the sitting position. Owing to this close proximity of the handle and shaft, it was almost impossible to enucleate tonsils with the patient lying down, hence the open angle in the present instrument. The shaft and blade are 1 in. longer than Ballenger's, and there are several other points of difference. The essential features are:

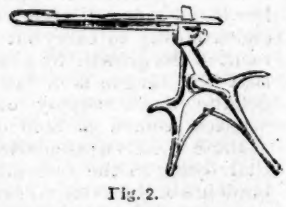

Fig. 2.

(*a*) A thin ring, not bevelled (like the usual type of tonsillotome), but square-edged around the margin of the opening.

(*b*) A small opening. The transverse diameter of the opening is eleven-sixteenths of an inch. The transverse diameter, including opening and ring, is fourteen-sixteenths of an inch. The antero-posterior diameter of the opening is ten-sixteenths of an inch. The two diameters of the opening can be increased up to thirteen-sixteenths of an inch with advantage, as this size will take any tonsil, and one instrument will suffice for all cases, but with the smaller opening the beginner can operate on the vast majority of cases with far less risk of including and damaging the faucial pillars, uvula, etc. It is therefore better to have the two sizes.

(*c*) Dull edged blade and long, stout shaft.

(*d*) No slot to receive the blade when the latter is driven home. The slot recess is filled with lead and the blade cuts on to this.

The thin ring, not bevelled, enables one to thread it on to any tonsil, no matter how flat, with very little risk of slipping when the gland is being raised forwards to the anterior pillar of the fauces. The small opening fits tightly around the base of the tonsil when the latter is squeezed through it and the capsule is inverted in this manœuvre. The thin ring and small opening have the further combined advantage of keeping the size of the instrument such that it will fit any fauces and remove any type of tonsil in one bite (if the larger opening is used). The stout shaft is necessary to prevent bending when pressure is exerted in raising the tonsil forwards. The shaft being long, the handle clears the patient's cheek and chin and facilitates movements. The dull-edged blade, entering between the anterior faucial pillar and the tonsil, strikes the anterior border of the capsule, and the leaded slot of the ring rests against the posterior border.

7. *Removal of the Tonsils.*

The patient's shoulders rest at s on the pillow shown in Fig. 1, the occiput at o, and the face looks towards the operator and the window. In this position the chin is thrown forwards from the chest and the head is partially extended. This position of the chin enables the operator to move the handle of his instrument freely from side to side, without any obstruction from the patient's chest or shoulders. When the facepiece of the gas apparatus is removed the fauces are full in the light of the window, as the mouth is already opened by the gag. Opening the mouth to its fullest extent is undesirable, as it tightens the faucial pillars and diminishes the mobility of the tonsils. Partial opening, just wide enough to give a good view and easy access to the tonsils when the tongue is depressed, is quite sufficient. Observance of this small point will obviate the dislocation of the lower jaw, which one hears of occasionally.

The right or lower tonsil is removed first. This enables the operator to seize the left or upper, and extract it before his view is obscured by blood from the lower. The right hand holds the instrument for both tonsils.

The tonsillectome is inserted with the outer aspect of the ring towards the tonsil to be removed, and the edge of the shaft is used as a tongue depressor, to bring the whole tonsil into view. The lower part of the ring is threaded under the lower pole of the tonsil, pressed firmly outwards, and the latter is then raised forwards as far as its mobility will allow. This movement is aided and slipping of the ring on the tonsil controlled by hooking the left thumb under the centre of the shaft.

The handle and outer end of the shaft are next carried to the opposite angle of the mouth, and a quarter turn given to the shaft, which is now lying obliquely across the oral cavity with its outer aspect upwards. This causes the tonsil to lie over the tonsillectome opening, bulging the anterior pillar, as it does when seized by a blunted conchotome in dissection enucleation. The handle is now slightly depressed, the ring still more firmly pressed up behind the tonsil, and the whole instrument withdrawn a little way. This movement has the effect of rolling the tonsil better into view, and its junction with the anterior pillar is more readily seen, for the insertion of the blade at the margin of the capsule. It also facilitates the inversion of the latter, when the left index finger is applied outside the border of the anterior pillar, on the prominence of the tonsil, to push it through the opening of the instrument. When the tonsil is slightly larger than the opening, and some pressure is required to squeeze it through, a peculiar sensation of "dislocation" is felt by the left index finger. This is due to the fact that the margins of the tonsillectome ring are firmly applied to the periphery of the tonsil, and offer resistance, so that when the latter is pushed through the opening the capsule is inverted, and gives a sensation of slipping, like that felt when a dislocated shoulder-joint slides into place on reduction.

The blade is now closed, and includes the whole periphery of the tonsil capsule between its dull edge and the leaded face of the ring. Both hands momentarily grasp the handle of the instrument and drive the blade more firmly home. Another half-turn is now given to the tonsillectome in the long axis of the shaft towards the uvula, and withdrawn, bearing the tonsil and capsule on the inner or under aspect of the instrument. In this way the capsule is stripped off its bed completely, and its vessels are first crushed and then torn across. For this reason the haemorrhage is far less than when a sharp blade cutting into a slot is used, as the latter type of instrument cuts through the margins of the capsule. All the tonsils removed are carefully examined, and in several long series done recently enucleation was quite as complete in every case as that by the dissection method. I have used this method exclusively for over twelve months—in nearly 1,000 cases—with very satisfactory results.

8. *Removal of Adenoids.*

After removal of the tonsils the patient is promptly turned on to the right side, and the anaesthetist empties the throat of blood by momentarily holding the face partly downwards over the side of the table and basin, and shaking the head. This obviates swabbing and much of the after-sickness due to swallowed blood or the risk of any of the latter entering the bronchi.

The patient's right cheek is now placed firmly on the process A of the pillow, with right shoulder in the notch N (Fig. 1). The curette which I find most useful is one which Krohne and Sesemann have made for me (Fig. 3).

Fig. 3.

It is practically the same size as Lake's No. 2, but shaped like the German-made modification of Gottstein's (a smaller size is used for children under 4 or 5 years of age). The cage somewhat resembles that in common use, but it is controlled by a spring which is exerting constant pressure on any mass of adenoids which enter it, and prevents their slipping out when the instrument is withdrawn. By using it as described below the main mass of adenoids is always withdrawn in the instrument, and where the mass is a compact growth it is removed so completely in one sweep as rarely to need any further curettage. This helps to obviate the risk of leaving a separated mass to be swallowed or inspired, or that of a hanging mass falling over the laryngeal opening and causing respiratory distress.

The operator's left hand is placed on the parietal and occipital region of the patient's head, to control the resistance to the pressure exerted by the curette, and to flex the head, as the instrument is being swept over the naso-pharynx. This flexion diminishes the prominence of the body of the axis, and makes the naso-pharyngeal curve more even. The curette is inserted in the middle line, using it as a tongue-depressor to enable the point to clear the uvula and avoid injuring it, and is pushed backwards until it strikes the pharynx. The point is then carried upwards, firmly pressed against the posterior wall, and still in the middle line, until it is stopped by the posterior border of the septum. It is now drawn forwards to pull on the soft palate to ensure its proper relationship to the latter before starting to cut. The point is again carried upwards along the septum and pushed backwards, downwards, and outwards, still in the middle line, with firm pressure and gradual, easy movement, whilst the patient's head is partially flexed and steadied by the operator's left hand. With a small uncaged Kirstein or Stubbs curette any remaining adenoid irregularities are removed by a series of short scrapes, and the forefinger is finally introduced to verify this.

9. *After-Treatment.*

The patients are placed in bed in an airy room for two days at least. It is always wise to keep them in bed for two days to recover from whatever degree of shock they may have suffered as a result of the operation. After this period they should be allowed to get up if they show a desire to do so. The diet should be cool liquids for the first two days, and then semisolids and solids.

The sodium salicylate mixture is continued for six days and then followed by syrup of the iodide of iron or syr. ferri phos. co. for a fortnight.

Breathing Exercises.

When healing is complete, a short, easy, daily course of breathing exercises, with the mouth shut, is insisted upon. This should be persisted in for at least six months.

Conclusion.

Let me enter a plea for raising the standard of this branch of surgery, by making it an operation of precision, and removing some of the reproach of doubtful value and inefficiency attached to it. In this connexion I should like to quote the following extracts from Dr. Still's excellent book on *Common Disorders of Childhood*:

"I would lay stress upon the importance of complete removal of adenoids and tonsils by whatever method is found to be most practicable." "I will venture to insist that the operation for removal of adenoids and tonsils is not so simple that anybody and everybody who happens to have a surgical qualification and a guillotine can do it as it ought to be done; it is one which, if done, ought to be done by the most expert skill attainable."

A CASE OF VAQUEZ'S DISEASE

(POLYCYTHAEMIA WITH PLETHORA, AND SPLENOMEGALY).

BY

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IT is now just over twenty years since Vaquez first described the syndrome of polycythaemia with true plethora, cyanosis, and splenomegaly, with which his name is associated. A full description of the condition, with the literature, was given by Parkes Weber[1] in 1908, and by myself[2] in 1911, while Senator's[3] monograph published in the latter year contains much of the most recent work on the subject. This observer then paid special attention to the condition of the gaseous exchange in the lungs. He found in several cases not only a greatly increased exchange of both oxygen and carbon dioxide, but also a great increase in the volume of air respired. Further observations are required with regard to these points. Since that date considerable additions have been made to the literature, and cases have been recorded by Hale White,[4] Emanuel,[5] Isaacs Coke,[6] and Parkinson[7] in this country, by Kuttner[8] in Germany, while Hamilton and Morse[9] have published a case in America with a full report of the *post-mortem* findings.

The fact that so many fresh cases have been published in so short a period shows that the condition is by no means so rare as was at one time believed. But while so much advance has been made in the recognition of the disease, it cannot be said that equal advance has been made in the elucidation of its etiology. The case which it is the purpose of the present paper to record merely confirms previous observations; it is, perhaps, of special interest because the bone-marrow was examined during life, a procedure which, so far as I am aware, has only been adopted before on one occasion, namely, in the case described by Gibson[10] and later published by myself.

A man aged 52, a gamekeeper, was admitted to the Royal Infirmary in August, 1912, under the care of the late Dr. G. A. Gibson. He complained of pain in the upper part of the abdomen. The family history is of little importance, his mother having reached the age of 92, while his father was the victim of an accident at the age of 54. He is married and has three children living, three others dying in infancy. With the exception of a slight attack of influenza fifteen years ago he has never had a day's illness. He is a non-smoker and practically a teetotaler, and from the nature of his occupation he leads a healthy open-air life. The pain of which he now complains first troubled him a month before admission. It is sharp and lancinating in character, is almost constantly present, and is felt in the left hypochondriac region. For some months his wife has told him that his face was becoming very florid. The patient states that he has had several attacks of epistaxis. He has lost fully a stone in weight during the last two or three years.

General Appearance.—His height is 5 ft. 8¼ in., and his weight is 9 st. 2½ lb. The face, lips, and ears show a striking degree of cyanosis. The tongue and mucous membranes are of a dark bluish-red tinge. The conjunctivae are markedly injected. He is thin, but not emaciated.

Alimentary System.—The tongue is clean and moist. The teeth in the upper jaw are artificial, the others having become loose and dropped out; those in the lower jaw are fairly good. He complains of some loss of appetite, and he also suffers to a slight extent from a sensation of distension and discomfort after meals. There is no sickness, thirst, or constipation. His breath is rather foul. The stomach is not dilated, and the vertical dullness of the liver is not greater than normal.

Abdomen.—The most striking feature of the examination of the abdomen is the presence of an enlarged spleen, which extends downwards and forwards three fingerbreadths beyond the left costal margin. It is firm, and very slightly tender to the touch. On auscultation distinct friction is heard over it.

Circulatory System.—The heart is not enlarged; the apex beat is in the fifth interspace, 3½ in. from mid-sternum. The sounds are closed and pure. The vessels are healthy and the systolic pressure 108 mm. Hg.

The examination of the respiratory system was negative.

Urine.—Acid; specific gravity 1016; deposit of urates and uric acid; no albumen or sugar. The centrifugalized deposit shows no tube-casts.

Nervous System.—The patient has occasionally slight headache. He states that he is unable to read for long at a time. The pupils react briskly to light and on convergence. The examination of the fundus oculi shows that the vessels are engorged with very dark blood.

The Blood.

Red blood corpuscles	8,420,000
Haemoglobin	100 % + (Tallqvist)
White blood corpuscles	39,000
Differential count of 400 leucocytes:	
Polymorphs	87 %
Lymphocytes	6 %
Large mononuclears	3 %
Eosinophiles	2.5 %
Mast cells	1.5 %

Further observations:

(1)	Red blood corpuscles	9,248.000
	Haemoglobin	100 % + (Tallqvist)
	White blood corpuscles	24,000
	Polymorphs	81 %
	Lymphocytes	8 %
	Large mononuclears	2 %
	Eosinophiles	4 %
	Mast cells	5 %
(2)	Red blood corpuscles	9,240,000
	Haemoglobin	110 % (Haldane)
	White blood corpuscles	28,200
	Polymorphs	77 %
	Lymphocytes	12 %
	Large mononuclears	1 %
	Eosinophiles	6 %
	Mast cells	4 %
(3)	Red blood corpuscles	9,760,000
	Haemoglobin	110 % (Haldane)
	White blood corpuscles	31,600
	Polymorphs	81 %
	Lymphocytes	9 %
	Large mononuclears	3 %
	Eosinophiles	5 %
	Mast cells	2%

The specific gravity of the blood, estimated by Hammerschlag's method, was 1062. The viscosity, estimated by Denning and Watson's clinical viscosimeter, was 26.4, that is, 2½ times the normal.

The coagulation time, estimated by Wright's coagulometer, was slow, 6 min. 25 sec. This is in accordance with the observations of Bence[11] and Pethybridge.[12]

The red cells were unaltered in size and shape; abnormal cells were exceedingly scanty, for though a large number of films were examined only two megaloblasts, one neutrophilic myelocyte, and one eosinophilic myelocyte were seen.

On September 20th Mr. Alexis Thomson kindly trephined the right tibia, and from the bone marrow thus obtained films and sections were made. Two days after the operation there was considerable bleeding from the wound, necessitating frequent dressing, and a haematoma formed. In order to determine whether the haemorrhage had caused any marked change in the blood count, the following observations were made:

Red blood corpuscles	9,216,000
Haemoglobin	110 % (Haldane)
White blood corpuscles	40,000
Polymorphs	86 %
Lymphocytes	4 %
Large mononuclears	6 %
Eosinophiles	3 %
Mast cells	1 %

It was also noted that the spleen had become much smaller since the previous day, and now only just reached below the costal margin, a fact which tends to confirm the usual view that, while the spleen in this condition enlarges partly on account of increased functional activity, it also acts partly as a reservoir to compensate for the greatly increased total volume of the blood.

The bone marrow from the centre of the shaft of the tibia was deep red in colour. The microscopical appearances were not nearly so well marked as in the case published two years ago. There was marked congestion, a few small haemorrhages were present, and the blood vessels were crowded with non-nucleated erythrocytes. The films did not show any great departure from the normal, but the sections revealed distinct though slight evidence both of erythroblastic and leucoblastic reaction. The fatty tissue of the marrow was encroached upon only to a slight extent; but when one remembers that all the long bones share in the erythroblastic and leucoblastic reaction, although it is only slight in degree, there is no difficulty in explaining the high counts of the red and white corpuscles.

Judging from the appearances of the bone marrow, the case must be considered a fairly early one. The patient was also singularly free from many of the usual symptoms associated with the condition. Pain in the left hypo-

chrondrium due to perisplenitis (of which the patient complained) is, apart from cyanosis and splenomegaly, one of the commonest symptoms of the disease. Three years ago I investigated[13] the relative frequency of the signs and symptoms of erythraemia in 58 cases, and found pain in the left side present in 50 per cent. Albuminuria, which I found in 60.3 per cent. of cases, was never present in the patient under consideration. Vertigo and obstinate constipation are usually marked features, yet this patient was free from them.

The blood in this case was extremely typical. Notable features were the high degree of leucocytosis and the high percentage of mast cells. The absolute increase in the polynuclears and in the eosinophiles is, of course, present in nearly all cases. The great increase in the blood viscosity in the presence of what is, after all, when we consider the extremely high counts found in this condition, only a moderate polycythaemia, must be partly explained by the large number of white cells present. I have found in a case of myelogenous leukaemia with a red count of 3,300,000, and a leucocyte count of 388,000, a viscosity value which, if the leucocytes were normal in number, would be equivalent to about five and a half million erythrocytes. An analogous case is reported by Denning and Watson[14] which makes it clear that the leucocytes have relatively a greater effect on the viscosity than on the erythrocytes.

No factor could be ascertained in the case here described which seemed to throw any light on the etiology of the condition.

The occurrence of influenza (which Saundby[15] considers important) was, even if one accepts his views, too remote to have any bearing on the case. Symptoms referable to the intestinal tract were vague and ill-defined, and were only mentioned by the patient when leading questions were asked. It certainly cannot be said that there was any definite evidence of the absorption of toxins from the bowel, although this possibility cannot be ignored. From the experience gained in this case, it would appear that operation in order to obtain bone marrow ought not to be lightly undertaken. True, moderate haemorrhage may be actually beneficial; but it seems that, as occurred in this case, the healing of the wound may be greatly delayed, owing perhaps to the sluggish circulation in the peripheral vessels.

My best thanks are due to Dr. John Eason, who was at the time in temporary charge of the ward, for giving me every facility for examining the patient and for permission to publish the case.

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A LABORATORY for cancer research is to be erected at Columbia University. The endowment is provided by the George Croker research fund of about £300,000, the income of which must be used solely for research.

THE personal estate of the late Dr. Edward Henderson, who died at his residence in Kensington on February 27th, has been declared at a net value of £44,241. Dr. Henderson, who became M.D.Edin. in 1864, passed most of his life in China, where he was medical officer of health and Surgeon-General of the European Hospital, and held an appointment also in connexion with the British Consulate.

THE Internationale Komitee für das aerztliche Fortbildungswesen (International Committee for Post-Graduate Medical Education) desires it to be known that it has no connexion with the Association Internationale de Perfectionnement Scientifique et Médical. The next meeting of the Internationale Komitee für das aerztliche Fortbildungswesen will be held during the International Medical Congress in London in August next. The International Committee is composed of delegates appointed by national organizations or by the Governments of the participating countries, and its object is the furtherance of medical education and mutual instruction based on experience reaped in different countries.

TUBERCULOMA OF THE LARYNX.

BY

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TUBERCULOUS growths in the larynx were suspected as far back as the Sixties of last century by Tobold, and again in the Seventies by Ariza and E. F. Ingals. J. N. Mackenzie, however, claims to have been the first to demonstrate, in 1882, the existence of tuberculous disease as a definite tumour occurring in the windpipe. His two first cases were observed *post mortem*, and were proved to be tuberculous by histological examination. A number of cases have been collected and published since then by Avellis, and Payson Clark, and others.

Mackenzie classifies tuberculous outgrowths in this region in three groups: (1) Granular hyperplasiae in connexion with tuberculous ulcers; (2) papillomatous excrescences, vegetations, and tumours, probably papillomatous tissue infected with tubercle, and sometimes the only visible sign of tuberculosis for a considerable period; (3) true tuberculous tumours—extremely rare—composed of masses of closely aggregated miliary tuberculous nodules, and occurring independently of infiltration and ulceration of the mucous membrane. The majority of reported cases are considered to belong to the first two groups.

In an examination of recorded cases I find that true tuberculous tumours are situated as a rule in the larynx, the usual sites being the ventricular bands, vocal cords, and ventricles, but they may also be found on the arytenoids, aryepiglottic folds, epiglottis, and in the trachea.

An interesting case was shown a few years ago by P. H. Abercombie of tuberculoma of the naso-pharynx in a man, which resembled clinically an adenoid mass or lympho-adenoma. Microscopic examination demonstrated its real nature. As a rule, lung changes are present or show themselves sooner or later; but in this case, as also in some of those in which the larynx has been involved, there were no other apparent symptoms of tuberculous disease. The fact, however, that such symptoms are not discoverable during life does not negative the existence of tuberculous lesions in the lungs, such being frequently found in a quiescent or healed state *post mortem*. One is therefore chary in regarding these growths as primary, and particularly so when it is known that they are usually covered with intact mucous membrane. Apart from the fact that tuberculoma of the larynx is rare, the following case is of interest in that the site was unusual and the disease had developed in a man of advanced years.

S. C., aged 69, was first seen by Mr. Bark and myself in September, 1908. He complained of a feeling of chokiness, especially on lying down at night, and of difficulty in swallowing food. These symptoms had lasted for a period of over three years and were becoming more aggravated in spite of the treatment that he had already undergone. There was nothing to note in his own or his family history with regard to tubercle. He was well nourished, had led a healthy outdoor life, and only of late years had been treated by his medical attendant for some "heart weakness." There was occasional cough but no expectoration. Owing to irritability of the throat examination was not easy, but the laryngoscope showed a pale greyish growth with a broad base and irregular surface extending from the posterior surface of the right arytenoid cartilage downwards into the hypopharynx towards the oesophagus. The right vocal cord and the right arytenoid cartilage were somewhat impeded in their movements. There was no ulceration in the larynx and no enlarged glands were to be felt in the neck. A portion of the growth was removed. Microscopical examination of a section showed a considerable number of giant cells, epithelioid cells, and lymphocytes, and a diagnosis of tuberculoma was made. This was confirmed by an opinion from Sir Felix Semon and Mr. Shattock, who later examined both the patient and the tumour section. There were no signs of tubercle elsewhere.

Removal of the growth was attempted with the wire snare, but the manipulation caused so severe and distressing a cough with spasms of the glottis that a more rapidly-acting instrument had to be used—namely, laryngeal cutting forceps. With this as much of the growth was removed as possible. Several remaining fragments were punctured with the galvano-cautery and the raw surface rubbed with lactic acid. The patient was practically relieved from his dysphagia for five months (October, 1908, to March, 1909), when there was some recurrence and the punch was again used, but, owing to the severe spasmodic cough, with less effect than on the first occasion. So acute was the distress from coughing caused by the introduction of the forceps that the attempt had to be abandoned. Two months later the tumour had grown to its former size and dysphagia

was troublesome. The introduction of forceps again brought on symptoms as described above, so severe that the patient dreaded any further attempts at removal, but he was able to tolerate galvano-cautery puncture.

Repeated and frequent applications of the cautery brought about alleviation of the dysphagic symptoms for the next twelve months. Swallowing then became painful as well as difficult, and the patient died from exhaustion some three months later (September, 1910).

As stated above, a tuberculoma is generally covered with smooth intact mucous membrane of a pale grey to a dark red colour. The surface was irregular and scarred in this case when we saw it, but this may have been due to some attempts at removal that had already been made. The disease is usually found between the ages of 20 and 45, and, as in this case, is of slow growth. As is the case with other forms of laryngeal tubercle it is more frequent in males, and is generally associated with a primary focus in the lungs. The results of treatment in a few cases of true tuberculous intralaryngeal tumour in the absence of any demonstrable lung changes have been excellent; this was no doubt due to the fact that operative interference and topical applications could be followed by more or less complete rest of the parts. The latter factor is of the greatest value in tuberculous lesions of the larynx, and as an example of this the following case may be cited:

A young lady, aged 23, was seen twelve months ago for hoarseness; the right ventricular band was found to be swollen and infiltrated and to cover the right cord, the left ventricular band to a less extent, but two months later the left cord was also hidden from view, and the epiglottis was slightly affected. Clinically the appearances were tuberculous. Von Pirquet's test was negative, lung changes were absent, and there was no cough or expectoration. Tubercle bacilli were discovered some months later. Besides using an antiseptic spray and attending to her general bodily health the patient carried out the somewhat depressing treatment of absolute voice rest for ten months. The right cord was the first to appear, and was slightly ulcerated, but gradually the larynx assumed its normal state, a certain amount of paresis of the adductors remaining.

Complete rest was the main object of this long silence, and, as in ordinary tuberculous laryngeal lesions, so in other forms, rest is essential. This is obviously what could not be obtained in the case of tuberculoma I have described, as the situation of the growth on the posterior aspect of the arytenoid and cricoid cartilages rendered the prognosis as regards cure unfavourable on account of the irritation produced by the passage of food and saliva.

AN ACCOUNT OF A TERATOMA OF UNUSUAL SIZE AFFECTING THE TESTICLE OF A HORSE.

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THE following case appears to me to throw some light upon the nature of certain tumours of the testicle which occur in man, and to be worth recording on that account.

On September 22nd, 1910, there was removed *post-mortem* from the abdomen of a bay cart-colt 2½ years old a tumour of the left testicle, which was imperfectly descended; the tumour had caused no symptoms during life. The right testicle, normally descended, had been removed when the colt was a yearling, and the animal died during an operation performed with the object of removing the gland on the left side.

Description.

The specimen removed consisted of the testicle, epididymis, and part of the spermatic cord (Fig. 1).

The pampiniform plexus was very large and the epididymis widely separated from the tumour, which appeared at first sight to have originated in the body of the testicle; but careful inspection showed, at the point where the epididymis joined the tumour, a flattened structure of a reddish colour, and about ¼ in. thick at its middle, spread out over an area of 6 in. by 4 in. Microscopic examination proved this to be the testicle; its deep surface was separated from the tumour by a well-marked capsule of fibrous tissue, but its superficial aspect was invested by a grey shining membrane absolutely continuous with that covering the surface of the tumour in its neighbourhood. I think it probable, therefore, that the tumour arose in the mediastinum testis, that is, within the tunica albuginea, but not in connexion with the seminiferous portion of the testicle.

The dimensions of the tumour were: Length, 16½ in.; breadth, 10⅜ in.; thickness, 8¼ in. It weighed, in the fresh

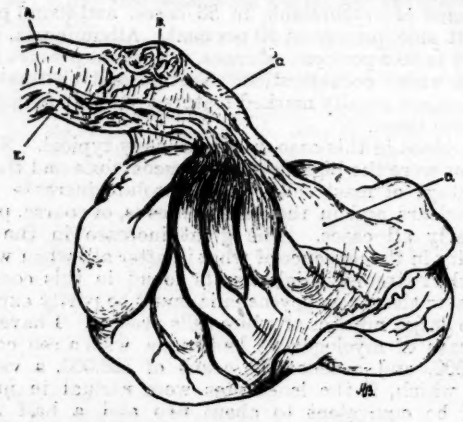

Fig. 1.—External appearance of tumour. A, Vas deferens; B, coiled portion of vas; C, epididymis; D, position of flattened testis proper; E, pampiniform plexus.

state, exactly 30 lb. The surface showed a division by a shallow groove into two approximately equal lobes, each of which was nodular, grey or pink in colour, with large veins running over it.

On section there was a much more obvious division into two lobes, separated from one another by a fibrous septum (Fig. 2). Each half consisted, for the most part, of a collection of cysts varying from a microscopic size to that of an orange. Most of the cysts were filled with a yellow mucinoid fluid, but some contained brown jelly; each cyst had a firm, shining lining membrane, and the walls of some of them contained tissue resembling cartilage; there were numerous intracystic growths which were themselves cystic.

Two of the smaller cysts, however, contained sebaceous material and numerous stiff, curly hairs (Fig. 2, A and B). In

Fig. 2.—Photograph of a section through the tumour. A and B, Cysts containing sebaceous material and hair; C, masses of solid vascular growth.

the cyst marked A the hairs were white; in that labelled B they were black. This point is of interest in view of the statement which is usually made, that the hair contained in a dermoid cyst is of the same colour as the hair of the individual bearing the cyst.

The *stroma* consisted largely of fat, with, in addition, fibrous tissue, numerous deposits of calcareous material, and a few small masses of cartilage. Scattered in this stroma were several circumscribed masses of soft, solid, vascular growth (Fig. 2, C).

The microscopic examination of the tumour revealed a structure even more complex than the naked-eye appearance had suggested.

The *cysts* were not all of the same nature. Those which contained sebaceous material and hair were lined by stratified squamous epithelium, and contained in their walls numerous sebaceous glands and hair follicles (Fig. 3); but others in addition were lined by stratified epithelium, with neither hair follicles nor sebaceous glands. The cysts which contained mucinoid fluid showed a lining of tall columnar cells, with very numerous goblet cells; these cysts were of very variable size, and all stages in the formation of the larger cysts from the smaller ones could easily be traced. Even in the large cysts the columnar epithelial lining was usually well marked (Fig. 4). A third variety of cyst, also numerous, contained granular

material, and possessed a lining of cubical cells, in some cases more than one layer in thickness; whatever their origin may have been, they cannot have resulted from cysts originally lined by columnar epithelium which became flattened as a result of the pressure of the cyst contents, for even very small cysts of this variety showed the same structure.

The *stroma* consisted, in addition to the masses of fat above mentioned, of connective tissue, in some parts densely fibrous

Fig. 3.—Section through the wall of one of the dermoid cysts labelled A and B in Fig. 2. Sebaceous glands are well seen lying beneath stratified squamous epithelium which forms the lining of the cyst. × 130.

with but few cells, in other cases myxomatous, and here and there densely infiltrated with small round cells. Nodules of well-developed cartilage were seen, the matrix of which showed evidence of calcification (Fig. 5). Calcification was also proceeding here and there in the fibrous stroma of the tumour. The masses of soft vascular growth shown at C in Fig. 2 consisted of a loose fibrous tissue basis, densely infiltrated with a columnar-celled growth, in some places forming regular

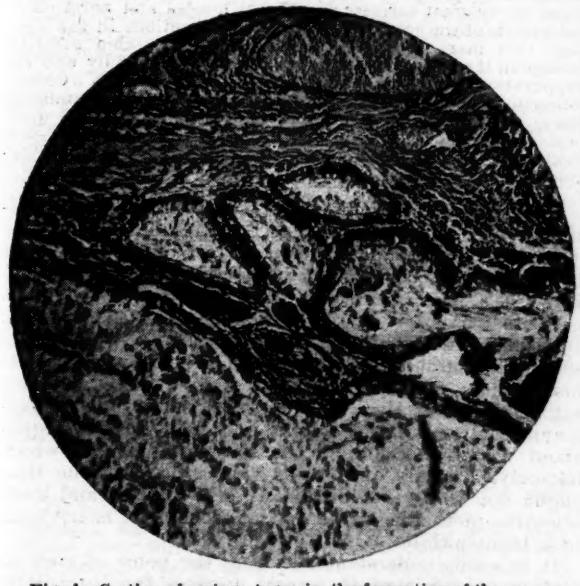

Fig. 4.—Section showing stages in the formation of the mucus-containing cysts. The cysts, both large and small, are lined by tall columnar epithelial cells, with many goblet cells. Calcification is proceeding in three spots in the stroma between the cysts. × 130.

acini which were grouped together into lobules, in other spots quite irregular and definitely carcinomatous (Fig. 6).

It is becoming generally recognized that the affection of the human testicle often known as "cystic disease" is in reality a teratoma, though the exact place and mode of origin of the growth is still a matter of dispute. In this case the teratomatous nature of the tumour is beyond doubt: the first section through the tumour showed a typical specimen of "cystic disease"; a further slice revealed the presence of the two hair-containing cysts, and microscopic examination showed clear evidence of tissues derived from all three embryonic layers, the ectoderm being represented by stratified squamous epithelium, hairs, and sebaceous glands; the entoderm by the cysts

Fig. 5.—Section through part of the connective-tissue stroma of the tumour. The section shows a nodule of cartilage, the matrix of which has stained much more deeply in the central part of the nodule, owing to calcification having occurred. The dense round-celled infiltration of some parts of the stroma is also well seen. × 80.

lined with columnar epithelium, and the masses of columnar celled carcinoma; and the mesoderm by the stroma of the tumour and the masses of cartilage.

Dermoid cysts are not uncommon affections of the imperfectly descended equine testicle. In man such tumours are excessively rare. Microscopic examination of cases of

Fig. 6.—Section of some of the soft solid growth seen at C in Fig. 2. It shows the structure of columnar-celled carcinoma. × 130.

cystic disease of the human testis frequently reveals their teratomatous nature, but it is uncommon for the epiblastic part of the tumour to be represented by cysts, containing hair and sebaceous material, large enough to be evident to the naked eye.

The great size of the tumour is worthy of note. I am informed that even in the horse a testicle of such dimensions is very uncommonly met with.

DISTILLED WATER VERSUS SALVARSAN IN THE TREATMENT OF SYPHILIS.

BY

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THE simple treatment for syphilis herein recommended consists of the hypodermic injection of 5 to 10 c.cm. of distilled water every three days for two to four weeks.

I was induced to give this treatment a trial as the result of some research work I had done on surface tension, the results of which I published privately some fifteen months ago. I had previously published in the *Practitioner* an article on the Part Played by Colloids in Physiology and Pathology, in which I drew attention to the value of a consideration of surface tension. An experiment that I carried out to show the effect of the calcium salts on surface tension is rather interesting:

When pure hydrogen peroxide is added to pure mercury in a clean test tube, catalytic action occurs and oxygen is given off, the mercury remaining unaltered. This reaction is due to an extremely fine film that forms on the surface of the mercury, but, on account of the tension, breaks almost as soon as formed, the making and breaking being rhythmic. On adding a small quantity of a 10 per cent. solution of pure calcium chloride to the mercury, shaking well and draining it off, the mercury itself behaved peculiarly, its surface tension having been modified to such an extent that it could be induced to take up all sorts of shapes instead of the usual globular one. When the hydrogen peroxide was added the mercury was immediately changed into a grey colour and was then broken up into minute grey masses, many of which passed, as in the colloidal form, through filter paper; meanwhile the ebullition of oxygen was exceedingly great, and the heat generated sufficient to make the test tube very hot.

This experiment has been given at such length in order to show the marked effect of a slight alteration of surface tension.

The value of mercury in the colloidal form as an antiseptic is due to its possessing the powers of both classes of antiseptics—namely, the power of the heavy metals to combine with protein matter, and the power of chloroform, toluol, and the like to interfere with the surface tension of all living cells. It seemed to me, therefore, that it would be of interest to find out the surface tension of individual substances, and with that object I instituted some experiments.

In some of the experiments it was found that colloid mercury as well as mercury perchloride and carbolic acid have a tendency to reduce the surface tension existing between mercury and potassium chloride, and the fall is not complete at once, but is progressive. This fact is important, for with such a varying surface tension around a living cell the latter finds it very difficult to accommodate itself to its surroundings; in fact it fails, and its life ends.

The water soluble contents of coal-tar pitch, which no doubt are responsible for pitch workers' cancer, have surface tensions that tend to drop considerably, whereas the soluble contents of blast furnace pitch have not this tendency, at least not to the same extent.

In the *Dublin Journal of Medical Science* for June, 1911, I gave the results of some experiments in which boiled yeast had been added to living yeast in a suitable growing medium, and I there showed that the effect of this addition was to stimulate the living yeast to marked activity, to a rapid life, and consequently to an early death. My experiments on the surface tension of boiled and unboiled yeast showed that whereas the surface tension of the latter was 70.62 dynes per centimetre, the surface tension of boiled yeast solution fell in twenty-four minutes from 70.96 dynes per centimetre, to 66.31, and in five hours to 61.02 dynes per centimetre.

I have previously shown that fertilizing with boiled bacteria stimulates the living ones to rapid growth and an early death. Boiled bacteria being vaccines, we can conclude that vaccines lower the surface tension, and by so doing produce their good results.

This lowering of surface tension is associated with a more rapid production of catalytic products in the cells, but the injection of vaccines is associated with the production of antibodies; therefore it seems but right to infer that the production of antibodies is closely associated with a lowering of the surface tension.

The addition of distilled water to blood corpuscles so affects the osmotic pressure as to cause a passage of water into the cell, which gets larger and eventually scatters its contents. In disease the rapid catalytic changes and the rapid production of antibodies are interdependent, and if one can induce these marked catalytic changes with or without a vaccine, one stands the chance of setting free a number of very useful and remedial antibodies.

In such a chronic disease as cancer it seemed to me that the process was allowed to continue owing to the absence of sufficient antibodies, or at least a sufficient number to act together at the same time, and if one could set free any catalytic antibodies in sufficient numbers one might get a good result.

Knowing of no vaccine to induce this antibody effect, it occurred to me that the injection of distilled water might so affect the surface tension as to bring about the osmotic effects, and with this object I determined to try the effect at the first opportunity, which I owe to Dr. Lloyd Edwards, Medical Officer of the Swansea Union, and to whom I desire to express my thanks.

CASE I.

A man (in the infirmary), aged 62, who was suffering from immensely enlarged glands of the neck, secondary to an epithelioma of the lip. The glands were suppurating profusely, and the smell was so bad that the room had to be fumigated continuously. I injected 8 c.cm. of distilled water into the skin of the back, having previously rubbed it with alcohol to remove the grease (for the introduction of grease has a marked effect on surface tension). I did this every other day, and after the third injection the smell had disappeared almost entirely and the fumigation was discontinued. The surface of the sore seemed to be much cleaner, and the suppuration became more profuse, but otherwise the disease was not checked.

CASE II.

A man who had previously been operated on for epithelioma of the lower jaw by Mr. Bilton Pollard, and soon after for clearing out the glands of the neck. This latter was an extensive operation, but the wound eventually healed up well and firmly. Within three weeks of his discharge from University College Hospital there was a return of the growth, and I thought that if injections of distilled water were started early enough one might be able to do some good. At this time the wounds were quite sound and firm, but after three injections, to my great surprise an abscess headed and burst about the middle of the scar. I continued the injections in the hope that this marked activity presaged a favourable catalytic change in the cells, but the growth increased rapidly and the suppuration came to a head in two other openings. Closely following the suppuration appeared a mass of granulation tissue arising out of the part where the wound had quite healed, which spread rapidly. During all this time the pus was inoffensive, and the nursing of the patient was never objectionable to the least extent.

The marked effect produced by the injections of distilled water made me feel certain that in any similar disease of less malignancy their effect ought to be still better, so with that object I undertook, with Dr. Lloyd Edwards's permission, the treatment of the syphilitic patients under his charge. Both he and his assistant, Dr. Dunbar, were rather inclined to treat my mission as somewhat harebrained, but at the end of a week's treatment of my first patient I was able to prove to their satisfaction that the effect was excellent. The Wassermann reaction is, in my opinion, nothing but a very roundabout way of determining the surface tension at which haemolysis occurs, and if this view is correct, the time ought not to be far distant when a simpler and more scientific method is introduced, and one that is not open to so many pitfalls.

It is easily understandable from the point of view of surface tension that in several diseases the haemolytic point may be the same although the antibodies may be different.

CASE I.

An alcoholic prostitute, aged 26, had been in the infirmary since June, 1912, suffering from ulcers on the face and a large ulcer on the left shin. She was first admitted in August, 1910, having been infected a few months previously.

The area covered by the inflammation and ulcers was wing-shaped, covering both cheeks, upper lip, and a good part of the nose, and over the whole of this area there was considerable thickening. The ulcer on the leg looked indolent and unhealthy. She had not menstruated for two years.

I started treatment on October 25th, and continued it every other day until November 4th, but discontinued it on November 6th, *as she had started to menstruate*. I restarted treatment on November 8th, and continued it every third day till November 23rd, when the ulcer on the leg had healed. By November 9th the ulceration on the face had cleared, although there was still some thickness, as well as dilated venules to be seen.

Her general health improved greatly, and she looked better and felt in better spirits than she had done for a long time.

The readiness with which the edges of the ulcer took on a healthy appearance was extraordinary, especially as she had ceased to respond to the ordinary methods of syphilitic treatment.

After each injection there was a marked reaction, the face becoming very flushed, and the temperature rising in a short time afterwards as indicated by the two-hourly chart. The four-hourly chart shows it still better.

Her general improvement was a matter of comment by all the others in the ward, and both Dr. Edwards and Dr. Dunbar were surprised.

CASE II.

T. A., aged 35, had been in the navy, but after leaving was employed at some works in the neighbourhood, where he received a blow on the arm, as the result of which there was a thickness which persisted longer than the usual bruise. With a history of syphilis, I naturally concluded that this was a syphilitic thickening of the periosteum, and gave him the injections of distilled water every other day. At the end of the fortnight the swelling and pain had disappeared, and he returned to work.

CASE III.

T. J., aged 46, was admitted to the infirmary on March 6th suffering from multiple ulcers of the left leg and foot. There was the brownish scar on the right shin, which confirmed the diagnosis of syphilis. The ulcers on the left leg and foot would nearly heal and then again break down, but never assumed a healthy appearance. I started injecting distilled water on October 31st, and continued the treatment every other day until November 16th, when I did it every third day. By the end of the first week the edges of the ulcers had taken on a very healthy appearance, and the pain from which the man suffered had practically disappeared.

There were ten ulcers altogether, and by November 23rd seven of them had healed over, and the two largest were two-thirds covered with new tissue. The man appeared healthier, and some colour had returned to his face. He said he felt much better, and looked forward to the time for each injection.

A reference to his temperature chart shows that there was a reaction after each injection, but the temperature did not rise nearly so high as in Case I.

CASE IV.

B. T., aged 24, had a hard chancre ½ in. in diameter on the dorsum penis, which appeared a fortnight before I saw him.

I started injecting him with distilled water on November 2nd, and injected him every third day, and by the 14th it had practically disappeared, as well as the enlargement of the glands in the groin. His general health improved rapidly, and he looked much better after a fortnight's treatment.

CASE V.

M. S., aged 20, single, was admitted in November, 1911, as she was pregnant and infected with syphilis. After confinement and some treatment she was discharged, to be readmitted on November 11th, 1912, suffering from tertiary ulcers in different parts of the body. There was a small sore on the right ear and one on the right eye, whilst one seemed to be forming on the forehead.

Treatment was started on November 12th, and by November 19th there was considerable improvement, the ear and eye being practically well, and the swelling on the forehead had subsided.

All the other ulcers had taken on a healthy appearance, so that by November 25th they were all covered over.

Her general health improved greatly, she seemed brighter, looked healthier, and had colour in her cheeks, whilst the appetite improved. She much appreciated the treatment, although she cried on the first occasion.

The temperature reactions in this case were very marked, as in Case I, rising a few hours after each injection to 100° F.

CASE VI.

W. E., aged 26, admitted October 10th for sores on the right leg. Was infected with syphilis in the army.

Treatment was started on November 10th, and, after injections every third day, the gummata on thigh and leg were all covered over by healthy tissue on November 25th. A sore inside the right cheek also subsided, whilst his general appearance became more healthy.

THE fourth International Congress of School Hygiene will be held at Buffalo, New York, in August next (25th to 30th), under the honorary presidency of Dr. Woodrow Wilson, President of the United States. The actual president is Dr. Charles W. Eliot, formerly president of Harvard University. The general secretary is Dr. Thomas A. Storey, Professor of Hygiene, College of the City of New York.

The Arris and Gale Lectures

ON

THE GENITAL FUNCTIONS OF THE DUCTLESS GLANDS IN THE FEMALE.

DELIVERED AT THE ROYAL COLLEGE OF SURGEONS ON MARCH 10TH AND 12TH, 1913,

BY

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[*Abstract.*]

LECTURE II.

IN the last lecture I endeavoured to estimate the direct and indirect influences of the ovaries in regard to the genital functions. In considering the indirect influences I discussed the effects of ovarian insufficiency, both in physiological and pathological circumstances, on what I may, perhaps, describe as the rest of the genital system of ductless glands; and I also demonstrated the effects produced on the general metabolism by this condition.

In this lecture I shall reverse the process and endeavour to trace as far as possible in the time at my disposal the influence of the rest of the ductless glands upon the ovaries and the reproductive functions generally.

THE RELATION OF THE THYROID TO THE GENITAL SYSTEM.

We shall, perhaps, be in a better position to consider the changes that occur in the rest of the genital system if we first discuss the effect on the general metabolism of removal of this organ.

Effects of Thyroidectomy on the General Metabolism.

Different mammals vary very much in their power of withstanding the disastrous results which may follow complete removal. I have never observed any grave effects supervene on the removal of the thyroid in rabbits. This has been explained on the ground that the parathyroids are relatively large, and lie well away from the thyroid itself, and consequently cannot be removed without a careful search—in other words, they escape removal during the operation of thyroidectomy.

Swale Vincent and Jolly have shown that after thyroidectomy the parathyroids actually secrete colloid, and, in fact, perform the functions of the thyroid, just as they resemble it in structure after this operation. But I do not believe that this question of the remaining parathyroids is the whole truth.

I think rodents have less need of the thyroid than other mammals, such as the carnivora. It may be because the diet is different, but also I feel sure it is due in some measure to the variations in the structure and function (or degrees of function) seen in the other ductless glands. I have already alluded to the differences in structure between the ovaries of rodents and the higher mammals. If we take cats and remove their thyroids many die in a few days, usually with convulsions. In these cases it is probable that the immediate result is due to the removal of the whole thyroid apparatus (thyro-parathyroid). Some, however, survive the operation for a long period of time. In all these cases one can demonstrate the removal of the whole thyroid together with the internal parathyroids, which are embedded in the two lobes of the thyroid. So that one gets in these animals the true effects of thyroid insufficiency. The number in which the metabolism was investigated fully was small, for, as already stated, many died too soon for the metabolism, as represented by the urinary excretion, to be estimated. The record of one non-pregnant cat, which was destroyed two and a half months after operation, has been selected as typical. Other cases were complicated by the cats having had kittens shortly before operation, and in consequence did not appear to be suitable for averaging.

In this animal acetone was present three times in twenty estimations after operation. The calcium excreted

after operation was the same in quantity as before operation. There was a drop in the phosphorus excretion, in spite of the increase in the post-operation specific gravity; and the total nitrogen and urea were increased out of proportion to this rise in the specific gravity. The ammonia coefficient also was slightly increased.

Before considering the effect of thyroidectomy on the rest of the ductless glands I will bring forward a rather important series of experiments in which thyroidectomy was performed on three pregnant cats, which survived the operation for some time. They were carried out in order to observe the influence of the thyroid on the metabolism during pregnancy, especially with reference to the possible production of the symptoms of eclampsia with marked alterations in the ammonia coefficient.

Acetone, albumen, and sugar were found a good many times after operation in one cat, and more frequently after parturition than before, without any real disturbance of the ammonia coefficient.

We found that so long as the cats remained pregnant the calcium excretion remained constant, but that after parturition it was increased to three times the quantity. The phosphates after the birth of kittens showed a remarkable increase, and there was a drop in the urea excreted. There was no real disturbance of the ammonia coefficient.

It does not appear probable, therefore, that the thyroid is in any way specifically connected with the production of eclampsia, as was originally suggested by Nicholson. It is true that two of our cats, which were in the first half of pregnancy, died with convulsions in a few days, but the manner of death was similar in every respect to that seen in non-pregnant animals in similar circumstances.

Effect of Thyroidectomy on the Ovaries and Uterus.

The normal ovary of the cat, with which we are concerned in these experiments, shows certain affinities for eosin in some of its elements. The zona pellucida, the liquor folliculi, the interstitial cells, and the cells of the corpora lutea, all stain faintly with eosin. After thyroidectomy all these elements show an increased avidity for this stain. This is especially true of zona pellucida and the liquor folliculi, and appears to be a matter of some importance.

It seems that removal of the thyroid calls for a response from the ovary, just as oöphorectomy did from the thyroid. And the nature of the response, if my observations be correct, is one of considerable interest, for it brings forward evidence that the granulosa cells of the Graafian follicle form an organ of internal secretion. But this secretion is not connected with the integrity of the uterus, for the effect of thyroidectomy on this organ is remarkable. The uterus of the thyroidectomized cat shows very considerable muscular atrophy, quite as much as occurs after oöphorectomy. But the same effect is obtained in the non-pregnant animal. The importance of this intense atrophy will be considered directly; for before drawing our final conclusions of these results it will be advisable to consider the clinical observations that have been made in regard to insufficiency of the thyroid.

Clinical Observations of the Effect of Thyroid Insufficiency on the Genital Functions in Women.

These are quite well known. We frequently see young girls with adiposity suffering from amenorrhoea, or we see the more marked insufficiency which produces myxoedema, and is also invariably associated with suppression of the menstrual function.

Now, both the minor and the major state of thyroid insufficiency are readily amenable to thyroid treatment, with one reservation: if the girl has suffered from thyroid insufficiency for some years past the period of puberty, and has never menstruated, then it may be impossible to relieve her genital condition, and the uterus may remain under-developed. If, on the other hand, the insufficiency has arisen later, after the subject has possessed full genital activity, then the uterus may, even after a long period of inactivity, resume its normal functions.

Further, the full and increased activity—if my interpretation of the staining properties be correct—of the secretion of the membrana granulosa cells, with inactivity of the uterus, puts out of court the hypothesis that the cyclic changes in the uterus are due to this secretion. On the other hand, it is possible that the secretion of the interstitial cells is rendered insufficient in the absence of thyroid secretion.

Effect of Thyroidectomy on the Suprarenals.

The normal suprarenal structure is well known, but I shall briefly refer to it in order better to illustrate the changes that occur—physiologically and pathologically—in the cat.

The suprarenal is divided into two parts, the cortex and the medulla. These have different physiological properties when examined experimentally. The medulla produces the well-known pressor effect of adrenin, while the cortex is inactive.

Now the changes that seem to indicate excessive activity of the suprarenals occur in the cortex. They may be seen normally in pregnancy and, so far as we know, in ordinary circumstances. The normal appearances differ, however, from those associated with the activity which follows thyroidectomy.

In three of my animals an actual calcareous deposit was found in the zona fasciculata subsequent to thyroidectomy. I have not seen this condition in a normal suprarenal gland.

Effect of Thyroidectomy on the Pituitary.

The changes that occur seem to be an increase in active eosinophile cells of the pars anterior at the expense of the large basophiles. And both in the pregnant and non-pregnant animal there is an increase of large active chromophobe cells, such as occurs normally in pregnancy. The latter are, of course, most pronounced in an animal in which thyroidectomy has been performed during pregnancy.

The condition was well seen in Cat X of my series. Forty-eight hours after operation two premature kittens were born. After a further interval of 120 days the animal was destroyed with chloroform. In this length of time all the chromophobe "pregnancy" cells would have disappeared in the ordinary course of events. But as the result of thyroidectomy they not only persisted but showed an increase in secretory activity. The secretion appeared to form vacuoles among the cells. In this case the pars nervosa showed no abnormal invasion of pars intermedia cells.

In the case of a non-pregnant cat (No. 9) killed 79 days after thyroidectomy again many active chromophobe cells were to be seen in the pars anterior, and an increase in active eosinophile cells at the expense of the basophiles.

We learn, then, from these observations that thyroidectomy causes an increase in the secretory activity of all parts of the pituitary body.

THE RELATION OF THE PINEAL TO THE GENITAL SYSTEM.

The pineal gland has never been successfully removed from mammals; and, owing to its inaccessible position in the brain, there seems to be little likelihood of experimental extirpation ever giving satisfactory results.

The effects of castration on the pineal have already been mentioned.

Clincal Effects of Pineal Disease on the Genital System.

Comparatively few observations have been made, but in most cases where a tumour has been observed it has been a teratoma, and somewhat remarkable symptoms have been seen. When the patient was a child, as was usually the case, there was a precocious development of the skeletal structures and also of the genital organs. According to L. Kidd, who has recently reviewed the literature of the pineal body, all the cases recorded occurred in boys. In a few instances obesity has been seen, but apparently unaccompanied by genital atrophy.

THE RELATION OF THE PITUITARY TO THE GENITAL SYSTEM.

Some of the normal physiological changes in the pituitary which occur are well known. But there is much need for a systematic investigation into the age changes in this organ. So far as I know, only a few isolated observations have been recorded.

There is reason to believe that the secretions of the pituitary determine many of the metabolic functions necessary for the establishment of puberty, or sexual maturity.

We fully recognize the remarkable enlargement and the histological changes that occur in this gland as the result of pregnancy. The eosinophilia disappears and a large majority of the cells of the pars anterior become chromophobe, and, as already mentioned, have been called "pregnancy" cells.

A few years ago Dale and also Hick and I showed that an extract of the posterior lobe produces powerful uterine contractions. This effect may be produced physiologically in labour by the infundibular extract.

Ott and Scott first showed that the same extract is a galactagogue. It is probable that there is an expressor effect. It would be interesting if it were a fact—of which we have no proof—that the pituitary normally promotes the secretion of milk. It is, however, certain, in my opinion, that after the birth of the child the stream of metabolic products directed to its maintenance and growth in the womb are diverted to the mammary secretion which is to supply its post-natal necessities.

Effects of Removal of the Pituitary (Partial or Complete).

Most of the early work on the extirpation of the pituitary was absolutely unreliable, and it was not until Paulesco improved the technique, which Harvey Cushing and Biedl subsequently adopted, that results worthy of consideration were obtained.

Cushing's conclusions may be summed up as follows: Complete extirpation caused death in a short time. The same effect was obtained by complete extirpation of the pars anterior. Partial removal of the anterior lobe led to the condition known as dystrophia adiposo-genitalis; that is to say, there was great obesity, with atrophy of the genital organs and undergrowth in young animals.

Biedl confirmed these findings, and also stated that the posterior lobe (pars intermedia and pars nervosa) might be removed without producing symptoms.

It is difficult to believe in the results of experiments in which the anterior or posterior lobe are said to have been removed separately. But there can be no doubt that partial removal of the anterior lobe is not difficult to accomplish; and the results following this procedure should be reliable.

Effects of Removal of the Pars Anterior.

On the Ovaries and Uterus.—There is no good description of the histological appearances found, but Cushing states that the Graafian follicles disappear while the interstitial cells persist. The uterus also undergoes atrophy. I have had no opportunity of examining ovaries after this operation, but, in view of the genital atrophy, would have expected the same changes as those which follow thyroidectomy—that is to say, the reverse of what has been found by Cushing.

On the Thyroid.—It has been noted by Cushing and others that there is a remarkable degree of hyperplasia in the thyroid after partial removal of the anterior lobe. This condition eventually subsides, and is superseded, it is said, by a considerable colloid formation, with apparent disappearance of epithelial activity.

On the Thymus.—This leads to hypertrophy of the thymus, just as the condition of hypopituitarism is often associated with thymus enlargement.

On the Suprarenals.—The operation, according to Cushing, is followed by hyperplasia and lipoid vacuolation of the cells of the zona fasciculata.

Clinical Observations of the Effect of Pituitary Insufficiency on the Genital Functions in Women.

These have been made chiefly in regard to acromegaly and the condition already described as dystrophia adiposo-genitalis. The former disease is supposed to be due to excess of secretion, and the latter to deficiency.

The relationship of these two conditions, however, is not quite so simple as the above statement would seem to imply. It is usual to find amenorrhoea both with acromegaly and with the condition which is supposed to represent the opposite in regard to secretory activity.

With acromegaly the excessive thickening of bones indicates calcium retention—a condition which appears associated with masculinity, as we shall see when dealing with the suprarenals.

In cases of dystrophia adiposo-genitalis genital atrophy is invariable, yet there is no doubt that, if the individual has had functional activity before the onset of the disease, this activity may return on relief of the condition by decompression or by administration of pituitary extract. I have observed this result follow injections of anterior lobe extract in dystrophia adiposo-genitalis. Similarly I have seen good results after the administration of this preparation in cases in which the patient was very obese and suffered from amenorrhoea, without showing the signs of intracranial pressure which are usual when the condition has reached the stage of dystrophia adiposo-genitalis.

Success is more likely when the patient has had some functional activity previously; but it is possible that delayed menstruation with obesity might be successfully treated if the patient has not long passed the usual age of puberty.

THE RELATION OF THE THYMUS GLAND TO THE GENITAL SYSTEM.

The thymus has been shown to have a very important relation to the development of the individual and of her reproductive functions. It is probable that once the genital functions are established the thymus rapidly undergoes atrophy, and plays no further part in the metabolism of reproduction. We have already seen that the thymus undergoes hyperplasia after removal of the ovaries.

Effects of Thymectomy on the Ovaries and on the Calcium Metabolism.

Paton found that if the operation be performed before puberty there is a rapid development of the genital glands. It appears, therefore, as if the thymus either inhibits the development of the ovaries (Biedl), or that their development follows the withdrawal of the thymus secretion.

It is highly probable that the thymus is intimately connected with the calcium metabolism; but it can hardly be, as Biedl suggests, that the effect of its secretion is to cause calcium retention in the bones—although several investigators (Basch, Cozzolino, Tarulli, and Lo Monaco) have found that rickets follows thymectomy in young animals, an effect not confirmed by Paton—for the skeletal structures become much more heavily laden with calcium phosphate after puberty when the gland atrophies.

Effects of Thymectomy on the Other Ductless Glands.

No reliable work appears to have been done on these lines. It is urgently needed, in order to clear up many of the difficulties concerning the relation of the thymus to the general metabolism.

THE RELATION OF THE SUPRARENALS TO THE GENITAL SYSTEM.

These glands may be studied in the same way that we have already adopted—that is, from a physiological and pathological standpoint.

In pregnancy certain changes occur normally in the suprarenals. So far as my own observations go these are confined to the cortex. The cells of the zona fasciculata appear swollen and cloudy.

Some observers (Guieysse and Gottschau) have found that in pregnancy the zona fasciculata increases in thickness at the expense of the zona reticularis and medulla. My own observations are in accord with this.

Effects of Removal of the Suprarenals.

In most mammals complete removal of the suprarenals causes death in from a few hours to a few days.

Many rats, owing to the fact that a large percentage of them have accessory interrenals, consisting of cortical substance, are said to be able to survive extirpation of the main organs. I have had no experience of extirpation experiments on these animals. My investigations have been carried out on rabbits and cats. Those from which both suprarenals were removed, either at one or at two sittings, died within forty-eight hours. I tried, therefore, the effect of the removal of one suprarenal in the hope of being able to produce insufficiency, since we know the other suprarenal hypertrophies in these circumstances, and shows a condition somewhat comparable with the hyperplasia of pregnancy. Two cats gave negative results in

regard to the metabolism; but with regard to two rabbits I obtained definite results. One of the animals was destroyed at the end of thirty days, as it was obviously dying. It was much emaciated, its weight having dropped from 2,000 to 1,400 grams.

The other rabbit died at the end of 127 days. It also was greatly emaciated, its weight having decreased from 1,710 to 1,020 grams. At first it gained weight after the operation, and then it steadily lost ground.

No cause for death was found in either case.

These results are apparently of some value, for, according to most recent authorities, unilateral extirpation in rabbits produces no symptoms.

With regard to the metabolism, we obtained very interesting results. In each case a considerable increase in the excretion of calcium was observed.

In one case the average quantity excreted after operation was seven times as much as that excreted before operation. In the other case it was sixteen times as much. The average for the two cases was, of course, between these figures. The excretion of phosphorus was not increased in proportion, as one might have expected.

The urea excretion was increased out of proportion to the differences between the specific gravities before and after operation.

Now this increase of the calcium excretion is of very considerable interest. It is well known that the view has been advanced that osteomalacia is due to insufficiency of suprarenal secretion, and Bossi first called attention to the beneficial results to be obtained by the injection of adrenin in these cases. Unfortunately I have not met with a case of osteomalacia in recent years. So I have had no experience of this treatment. But these experiments give very strong support to this view of Bossi, not only in the metabolism results, but in a most striking way in regard to the bones of one of these animals.

The bones of the forelegs—on which I presume a good deal of weight would fall—were found to be markedly bent. The bones of the back legs, which are thicker, were only slightly curved. But owing to the manner in which a rabbit sits very little weight would fall on these bones.

Effects of Suprarenal Removal upon the Pituitary Body.

The changes that occur seem to be much the same whether the insufficiency be acute or chronic; thus, in cat No. 1 of my series of suprarenal removals, the glands from both sides were removed at the same time. There was an interval of thirty-six hours between operation and death.

The cells of the pars anterior show a marked degree of chromophobia with a moderate degree of faint eosinophilia. In many places the nuclei are very deeply stained with haematoxylin.

In the pars intermedia the cells are discrete—that is to say, they are not fused, and show no special activity; the nuclei stand out prominently.

The pars nervosa is freely invaded by the cells of the pars intermedia, but the nuclei only are prominent, as though they were left stranded after the disappearance of the cell cytoplasm.

We cannot, therefore, come to any conclusion other than that the anterior lobe shows increased activity. The pars intermedia is certainly not in an actively secreting condition, but the extensive invasion of the pars nervosa by pars intermedia cells, and the rapid disappearance of the cell cytoplasm, appear to indicate that an attempt is being made to counterbalance the loss of adrenin by the rapid production of infundibulin.

Effect of Removal of the Suprarenals upon the Thyroid.

I have been unable to trace any histological change either in acute or chronic suprarenal insufficiency.

Effects of Removal of Suprarenals on the Ovaries and Uterus.

There appears to be no histological change of importance in the ovary; but it is worthy of note that the normal cosinophilia of the zona pellucida is not decreased—rather, if anything, is it increased. After removal of one suprarenal, if insufficiency be produced, the uterus appears to undergo changes comparable with those that are seen after thyroidectomy, but the muscular atrophy appears to be less in extent; probably this is due to the state of incomplete insufficiency.

Clinical Observations of the Effect of Pathological Lesions of the Suprarenals on the Genital System.

We meet with conditions in the human subject which represent both an under-secretion and an over-secretion of the suprarenals. This is decided on clinical and histological evidence. At the same time, we are still in the dark as to the exact relationship of the cortex to the medulla.

In Addison's disease we have what are apparently the symptoms of insufficiency of medullary secretion, as is shown by the low blood pressure and general muscular weakness. But in this disease the cortex also is destroyed.

It is doubtful if sufficient pathological observations have been made with a view of observing changes in the ovary and uterus to enable us to give any definite statements regarding them.

Amenorrhoea is, I believe, usually associated with Addison's disease, but this may be due solely to the effects of a condition which produces general progressive enfeeblement. On the other hand, our experimental evidence indicates that atrophy of the uterus, and presumably insufficiency of the function of the interstitial cells, occurs in these circumstances.

The other pathological lesions which have been subjected to a good deal of attention lately are hyperplasia and tumour formation in the suprarenal cortex. For some years these lesions have been known to be associated with extraordinary changes in the primary and secondary sex characteristics. Attention was first called to these interesting phenomena by Woolley, Bulloch and Sequeira, and Neugebauer.

Last year my colleague, Professor Ernest Glynn, reviewed exhaustively the whole subject and added 5 fresh cases in children to those already collected by Bulloch. Out of 17 cases in children 14 were females. In these there was usually skeletal overgrowth, hair on the face and pubes, and sometimes hypertrophy of the clitoris. Further, Glynn collected 6 cases occurring in young adult females, in all of whom there was growth of hair on the face, shrinkage of the breasts, amenorrhoea, and sometimes a masculine voice.

Pathologically the suprarenal enlargement in the children and young adult females was unilateral and neoplastic in character, and directly or indirectly caused death. Metastases were sometimes found.

In a second group of cases there were 13 pseudohermaphrodites—12 being females—and in these the suprarenal enlargement was bilateral, hyperplasic in character, and there were no metastases.

Glynn suggested that in these cases hyperplasia of the suprarenal cortex occurred in fetal life before the differentiation of the genital ducts, and led to the persistence of the Wolffian derivatives, thus causing female pseudohermaphroditism.

No sex changes are associated with tumours of the suprarenal cortex when they occur in adult males or in women after the menopause.

THE CORRELATION OF THE INTERNAL SECRETIONS IN REGARD TO THEIR GENITAL FUNCTIONS.

I have endeavoured to trace, for the most part from my own observations, the disjointed facts concerning the influences exerted by the different members of the ductless gland system upon one another and on the metabolism generally, in so far as the genital system is concerned. And in so doing I have sometimes shown clearly the nature of the associations between the different organs. But it is absolutely impossible at the present time to correlate *fully* all their functions, so that perhaps the less said now the less there will be to withdraw at some future date.

In view, however, of what I said at the commencement as to the necessity for a lead in this intricate matter, I cannot refrain from enunciating what I believe to be the general principles. I shall not have time further to analyze the details.

It appears, from the evidence at our disposal, that, in spite of great variations in the structure of the ductless

glands in different mammals, the *total functional result* is the same so far as the genital processes are concerned. The variations in function that depend on the differences of structure are probably related to differences in the food and habits of life.

In adapting our knowledge to the requirements of human physiology and pathology we must take into account *both* the essential functions I have already referred to—the individual metabolism of the mother and the metabolism of her reproductive functions—for they are completely interdependent.

We have seen as the result of our studies that the ovaries, on the one hand, have as their share of these dual functions the onus of ensuring the reproduction of the species, by furnishing the ova and by keeping active the rest of the genital structures and functions. And, further, the secretions of the ovary are concerned in keeping the other members of the ductless gland system in touch with the necessities of the reproductive situation. The latter function is of the deepest importance, and is one which explains much that would otherwise be obscure.

When the reproductive functions cease and the ovaries atrophy at the menopause the harmony that previously existed between the general and the genital metabolism is temporarily deranged, and various disturbances may ensue. And it is only by the careful investigation of each menopausal case that one can arrive at a determination of the manner in which the balance has been upset. It is impossible always to alleviate the symptoms, but the basis of treatment rests on the regulation of the existing disarrangement by the administration of the necessary secretions. Some patients react to thyroid extract, some to pituitary, others again to combinations, so great are the individual variations. In most cases a natural readjustment takes place in the course of time. So that, strictly speaking, the ovary is only concerned in the temporary function of reproducing the species, and, by its hormones or internal secretions, of bending the metabolism of the body to its purpose. As accessory to these functions the ovary has been supposed to be responsible for the beauty of the vessel by means of which its ends are to be attained. But to-day we are beginning to wonder how far the ovary does influence secondary sex characteristics, and whether full individual secondary characteristics can be obtained by the influence of the ovary alone.

We have evidence that hyperplasia of the suprarenal cortex can upset any influence the female genital gland may be supposed to possess, and can produce in a female some of the secondary characteristics of the male, and even partially change the genitalia to complete the picture.

I well remember seeing a case under the care of Dr. Russell Andrews. The subject possessed every female characteristic except for the absence of uterus, Fallopian tubes, and ovaries; instead there were testes within the abdominal cavity. This individual was a male pseudo-hermaphrodite with the pure secondary characteristics of a female, and a prepossessing one at that. Such a condition could not have existed with hyperplasia of the suprarenal cortex.

Any influence the ovary has over the general metabolism is, then, related to and dependent on its primary reproductive function. I do not believe that it influences the metabolism except in so far as this special function is concerned. Of course, removal of the ovaries may produce a temporary disturbance, but this has already been explained, and does not invalidate the view just mentioned.

On the other hand, the rest of the ductless gland system is related to the genital function in various ways.

First, some of the members—the thyroid, pituitary, and suprarenals—influence the development and subsequently preserve the integrity and activity of the genitalia, as I have already demonstrated. Others—the thymus and possibly the pineal—appear to prevent sexual precocity.

Secondly, all the ductless glands control the metabolism in response to the necessities of the genital functions; but, in addition, they adapt the whole organism to the possibility of the situation and regulate the secondary characteristics, both physical and psychical, to suit the needs of the individual. Once, however, the reproductive organs are removed or undergo atrophy, the primary genital functions of the rest of the ductless glands cease, and the rearrangement of the metabolism that follows produces what are known as the symptoms of the menopause. Contrariwise insufficiency of the thyroid, pituitary, or suprarenals causes the cessation of the genital functions with atrophy of the uterus.

As to the more particular parts played in the metabolism by each member of the ductless gland system, these have already been specified.

In spite, therefore, of the reluctance to correlate our knowledge shown by most investigators, the matter is not one of very great complexity if my views be correct in a general way, although there remains much detail to fill in.

As soon as possible we must come to a conclusion as to what are the facts. So much work that has been done is contradictory. There is therefore so much more the need for further efforts.

In concluding, I would again insist that in order to solve completely the problems surrounding the genital functions we must focus at one and the same time the two essential processes of life—the individual metabolism and the reproductive metabolism. They are absolutely interdependent. Indeed, the individual metabolism is the reproductive metabolism. It is the neglect of this point of view that has brought about much of the confusion that exists.

Weismann and Ray Lankester describe the relation between the reproductive cells and those of the soma in still more striking terms. The latter says: "Among the multicellular animals, certain cells are separated from the rest of the constituent units of the body, as egg cells and sperm cells; these conjugate and continue to live, whilst the remaining cells, the mere carriers as it were of the immortal reproductive cells, die and disintegrate. The bodies of the higher animals which die may from this point of view be regarded as something temporary and non-essential, destined merely to carry for a time, to nurse and to nourish the more important and deathless fission products of the unicellular egg."

Whatever views we may hold as to details, I question whether this philosophical statement is open to contradiction.

The function of reproduction in all its preparations and performances commences in the early stages of segmentation, and may be said to continue in man until the care of the offspring is completed.

In many insects, male and female, the act of reproduction is also the cause of death. Evolution and the pressing necessities of individual life have led men to look upon the function of reproduction as of vastly inferior importance to their own individual metabolism. No doubt women will soon come to think so too, for they seem to be changing. Whether this change be due to an increasing hyperplasia of the female suprarenal cortex I do not know. But just as we are beginning to think that our knowledge of their special functions is becoming well defined they invite us to follow their further evolution, which apparently they think will not involve them in the joys of motherhood.

Telmont said "Propter *solum uterum* mulier est quod est"; Chévau changed this to "Propter *ovarium solum* mulier est quod est."

Virchow reiterated this statement and, according to Biedl, added that "All the peculiarities of her body and mind . . . everything, in fact, which in the true woman we admire and revere as womanly, is dependent on the ovary."

In the light of our present knowledge I venture to think that the following aphorism more nearly describes the cause and effect:

Propter *secretiones internas totas* mulier est quod est.

The original work detailed in these lectures, which were illustrated with many photomicrographs and colour photomicrographs, was carried out in the Biochemical and Pathological Laboratories in the University of Liverpool; and I am much indebted to Professor Benjamin Moore and Professor Ernest Glynn for help in various directions, and especially for the facilities accorded to my assistants, and for the superintendence of their work.

The entire expenses were defrayed out of the J. Arthur Smith Research Fund.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

UNDEVELOPED LARGE INTESTINE.

DR. CLIFFORD MAYER reports (JOURNAL, March 8th, p. 498) a case of undeveloped large intestine in an infant. The following is another instance: I operated on a child last month as a last resource, explaining to the parents that it would most certainly die if left alone, and probably even if operated on. A soft catheter could be passed 4 in. up the rectum, and I diagnosed absence of part of the gut. I made an incision in the middle line, and rapidly stitched the caecum to a small opening in the right iliac region. The large intestine from the caecum to the sigmoid flexure was represented by a white thin, cord-like band, having about the appearance of a rather narrow white shoe-lace. The small intestine was greatly distended, and completely hid the large gut. The appendix was well developed, and the caecum was distended. The lack of patency in the large gut appeared to begin about 1 in. from the colic end of the caecum. The operation was undertaken later than I would have wished—about the third day after birth—and the child died shortly after. The mother stated that her first child had "no back passage."

A case I had last year, evidently of the same nature—lack of development of the large bowel—died without operation a week after birth. In this a bougie was passed about 4 in. up the rectum. The mother of this case also said that she had had an infant with "no back passage," which had died soon after birth.

Gillingham, Kent. IAN JEFFERISS.

HAEMORRHAGE FROM A CORPUS LUTEUM CYST.

ON May 15th, 1912, Mrs. F., aged 18, nullipara, was suffering from acute abdominal pain and vomiting and diarrhoea. She had been ill two days. The temperature was 102°. The abdomen was rigid, and there was tenderness in each iliac fossa, but particularly on the right side, the rectus on that side being on guard. She was expecting to menstruate at any time. On vaginal examination there was nothing palpable in either fornix, but there was tenderness on the right side. Menstruation began next day, May 16th; it lasted five days and was normal.

On May 22nd an operation was undertaken to remove the appendix. On opening the peritoneum the abdominal cavity was found to contain free blood. The appendix was inflamed and was removed. The right ovary and broad ligament were normal. As the left ovary and tube could not be reached through the appendicectomy incision, the patient was placed in the Trendelenburg position and an abdominal section made in the middle line. The left ovary, on being brought up into the wound, was found enlarged and cystic, and adhering to it was a small mass of dark clotted blood about the size of a filbert. When this was removed blood oozed freely from a small sharply cut puncture. The peritoneum contained about three pints of blood-stained fluid and clots. Microscopically, the cyst showed the characters of a corpus luteum and no sign of an ovarian pregnancy.

Dubbo, N.S.W. F. ADAMS, M.B.Sydney.

SCARLATINIFORM RASH DUE TO VENICE TURPENTINE.

A MAN of 22 was first seen on February 6th, having been sent by his medical man as a probable case of scarlet fever.

The history given was that he had felt warm and flushed on the previous afternoon, and by evening the skin all over the body was red. There had been no sickness, and no sore throat. A typical vivid scarlet punctate rash was found all over the body, and on the fauces there was marked redness and mottling. There was only a slight white coating on the tongue, but the temperature in the mouth was 99.2° F. I inquired whether the patient had been taking any unusual article of diet, or copaiba, or other drug, but the only suspicious circumstance was that he had taken a few doses of what he called "Veno's turps" for a cold. In view of the typical scarlatiniform rash, the appearance of the fauces, and the slight rise of temperature, it was decided to isolate the case for observation. The rash faded quickly, there were no further symptoms of illness, and no sign of desquamation after fourteen days.

As the case was so suggestive of a drug rash, I made inquiries, and found that the remedy the patient had been taking was really Venice turpentine, a thick resinous preparation, with a bitter acrid taste, not infrequently taken for pains in the back supposed to be due to the kidneys. The man had taken of this drug a piece the size of a pea twice on February 4th, and three times on the 5th, before I saw him on February 6th.

Venice turpentine is an oleo-resin obtained from the larch. In its composition, physical characters, and action on the body, it is very similar to copaiba, and the oil it contains is isomeric with oil of copaiba.

From these facts I think it highly probable that the rash in this case was due to the Venice turpentine, and that the rash invaded the fauces. The slight rise of temperature may have been due to the cold for which the patient had been treating himself.

I have been unable to find mentioned anywhere the possibility of a rash from this particular cause being mistaken for scarlatina, and in view of the importance and frequent difficulty of diagnosing scarlet fever, I think it may be of interest to record the case.

WILLIAM ANGUS, M.D., D.P.H.,
Assistant M.O.H., Ipswich.

FETAL GOÎTRE.

ON January 11th, 1913, I delivered a primipara, aged 31, at full term of a male stillborn fetus with a large goître. Labour commenced at 9 p.m. on January 10th; at 5 a.m. on January 11th, when I was called by the midwife, the membranes had ruptured, the os was dilated, and the face presenting, the lower maxilla being anterior and slightly to the left about one inch from the perineum.

I administered chloroform and tried to apply Neville's axis traction forceps, but the upper blade would not lock with the lower. I then introduced my left hand to ascertain the cause of obstruction, and found that the head was greatly elongated, and that it was quite impossible to apply forceps. I turned the fetus and brought down the right leg; the patient then, with the help of traction with a towel around the foot, delivered herself. The occiput was greatly elongated, and extended to about the fourth dorsal vertebra. A goître occupied about two-thirds of the left side of the neck. It measured 10¾ in. at its greatest circumference. The mother has had a large goître since she was 14. Her mother is free; her sister and her two brothers have goître. The case, I believe, is rare. The elongation of the occiput on the right side is probably to be accounted for by the goître being larger on the left side of the neck and so pushing the lower maxilla to the left of the symphysis pubis during delivery.

J. G. MCLANNAHAN, L.R.C.P. and S.I.,
Stonehouse, Gloucestershire. L.M.Rotunda Hospital.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

ROYAL NAVAL HOSPITAL, PLYMOUTH.

RUPTURE OF LIVER: RECOVERY WITHOUT OPERATION.

(By W. EAMES, Deputy Surgeon-General, R.N.)

A STOKER, aged 21, was admitted at 10 p.m. on December 10th, 1912, suffering from abdominal injury, caused by falling sideways from a ladder on his ship, a distance of 5 to 6 ft., and alighting across his epigastrum on the steel edge of the coaming of a hatchway beneath.

I found the patient blanched, and in an extreme state of collapse; the pulse was imperceptible at each wrist, the lower extremities cold, and respiration shallow and sighing. He was conscious, and complained of great abdominal pain.

On examination, the patient lying on his right side, the whole of the right half of the abdomen was found to be markedly dull and slightly bulging, with a marked sense

of fluctuation, evidently due to blood in the peritoneal cavity from ruptured liver; there was no vomiting. Prior to my arrival Surgeon Wilson had administered ether and strychnine hypodermically, and a rectal injection of saline solution (20 oz.). The patient was well packed round with hot water bottles, and no improvement having followed the before-mentioned treatment, I ordered a hypodermic solution of ergotinine citras $\frac{1}{100}$ gr. in the right flank; this was followed in a few minutes by an apparent improvement in the patient's pulse, which was just perceptible; a further injection of the same dose of ergotinine was given, followed after a brief interval by morphine hydrochlor. $\frac{1}{4}$ gr. hypodermically; the paroxysms of abdominal pain, which had been present since admission, now became less frequent; the pulse was only occasionally perceptible at the wrist, and the extremities remained cold. The patient was moved on the anaesthetic table on which he was lying to the operation ward, and placed in front of the ward stove.

Next day the pulse volume had improved, and there was no increase in the abdominal dullness; some retention of urine was relieved by catheter; the urine was clear; the tongue was inclined to dryness; there had been no vomiting, the abdominal pain was less, and the colour had improved. With the patient now lying on his back there was marked dullness in both flanks.

I administered morphine hydrochlor. $\frac{1}{4}$ gr. hypodermically, directed that no food should be given by the mouth, ordered nutrient enemata, and rectal injections of saline (6 oz.) every four hours. At 6 p.m. the patient was drowsy, and had occasional bouts of pain in the abdomen; retention of urine was relieved by catheter. He had retained rectal salines and the greater part of the nutrient enemata. He slept well, and urinated normally.

On December 12th the pulse was of fair volume, the pain in the abdomen slight, the dullness was less marked in the left flank, well marked in the right; rectal salines were given every two hours, and the nutrient enemata continued. At 6 p.m. it was reported that he passed two loose, dark-coloured stools. Morphine hydrochlor. $\frac{1}{4}$ gr. was given hypodermically.

On December 13th he was doing well; the abdominal dullness was confined to the right hypogastric and lumbar regions. Small quantities of fluid nourishment were allowed by the mouth. The volume of the pulse had improved. At 6 p.m. he was comfortable; an injection of morphine $\frac{1}{4}$ gr. was given at 9 p.m.

On December 14th his local and general condition much improved; but on December 15th, after transfer to a general ward, he was seized suddenly with considerable pain referred to the upper half of the abdomen. He became faint and somewhat blanched, and was evidently the subject of a secondary haemorrhage due to the breaking down of a portion of the already formed blood clot, caused by excessive body movement. Morphine $\frac{1}{4}$ gr. was immediately given hypodermically, followed shortly after by ergotinine citras $\frac{1}{100}$, and ice was applied to the abdomen. Next day he was markedly jaundiced, and there was some haemoglobinuria; the pulse was 50, and of good volume; there was no abdominal pain, but dullness in the right flank had somewhat increased. On December 17th the jaundice was very marked, as also the haemoglobinuria; there was no abdominal pain, and the pulse was 42, and of good volume. On December 18th the jaundice and haemoglobinuria were less marked, and his general state was otherwise good; the bowels were acting well; the pulse was 48, and its volume good.

From this date the patient, both locally and generally, steadily improved. On December 29th there was slight dullness in the right loin and hypogastric region, but he was taking full dietary without any distress or inconvenience, and his colour was quite good.

I think this case is interesting from the point of view of recovery from what appeared to be an impending fatal condition, which latter prevented one dealing with it operatively without producing an immediate fatal issue.

UNDER the will of the late Miss Mary Bone, of Lancing, the Worthing Hospital receives a bequest of £500, other sums of £300 and £200 respectively going to the Chichester Infirmary and the Sussex Eye Hospital.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF GYNAECOLOGY AND OBSTETRICS.

Ventrifixation.

AT a meeting on March 6th, Dr. AMAND ROUTH, President, in the chair, Dr. W. S. A. GRIFFITH, in opening a discussion on ventrifixation of the uterus, said that the operation was adapted for the relief of certain cases of displacement of the uterus, where there was a failure on the part of the supports of the uterus to maintain that position necessary for the comfort of the patient, and to enable her to perform ordinary laborious duties. These cases fell into two classes: (1) Those in which the supports of the uterus were sufficient to maintain it at, or nearly at, its proper level in the pelvis, but in which retroversion or retroflexion of the body of the uterus and adjacent broad ligaments, leading to prolapse of the ovaries, was the cause of the serious discomfort. (2) The cases in which prolapse of the uterus, broad ligaments, and ovaries was considerable and associated with varying degrees and forms of vaginal, vesical, and rectal protrusion. Many cases in both these groups were sufficiently relieved by pessaries, though some women, for various reasons, preferred the relief to be obtained by operation to the prolonged use of pessaries and the medical attendance and frequent douchings which were the necessary alternative. The following appeared to be clear indications for the operation: Class 1: The uterus is retroverted and more or less fixed by adhesions. The uterus is pressed down in the position of retroversion by a tumour, commonly ovarian. After enucleation of a fibroid from a retroverted uterus. The retroversion is complicated by prolapse and enlargement of the ovaries, a constant source of pain, unrelieved, and in some cases increased, by the pressure of the pessary. The retroversion or retroflexion is not kept in position by a pessary owing to the small size of the vaginal cervix or the dilated condition of the vagina. Class 2: In the second class the operation was often needed, the prolapse of the uterus being accompanied by prolapse of the vagina, and in most cases great enlargement of the vaginal orifice. The large rings so frequently used did much harm by the greater dilatation of the vagina which they caused. The support which the operation gave to the uterus in this class was only a part of that needed for their complete relief, and the speaker usually performed it at the end of the vaginal operation—namely, after curetting, partial excision, or repair of the cervix, if these were needed, and after the repair of the posterior vaginal wall and perineum, with anterior colporrhaphy if the cystocele was considerable. An examination of the patients twelve months or longer after operation was essential for a correct opinion as to the result. Some surgeons were in the habit of performing this operation in cases of retroversion in women of poor general health, who had no local symptoms, with the idea that retroversion was a cause of the general feeble state of health. The condition of the uterus in these cases was merely a symptom, and in no sense a cause of the ill health, and it was undesirable to subject such patients to this operation.

The next speaker, Professor H. BRIGGS, discussing the technique of the operation, advocated a purely peritoneal direct ventral fixation over a limited and appropriately chosen area, that is, over a site immediately adjacent to the pelvic floor. As a low-level fixation by silk suture of the lower portion of the body of the uterus to the parietal peritoneum adjacent to the summit of the bladder, its peritoneal bands were harmlessly and effectively situate above the usual cervical site of the retroflexion. This method of ventral fixation further ensured complete freedom to the greater part of the body of the uterus during the child-bearing period of life when the operation was at its best. Only in a relatively small number of cases was ventrifixation alone adequate treatment.

Dr. A. E. GILES dealt with after-results, but premised that his remarks referred not to "ventrifixation" or "ventrosuspension" of the uterus, but to a specific operation to which the speaker restricted the term "hysteropexy." The

features of this operation were described. In his previous recorded after-results of abdominal operations down to July, 1909, there were 309 cases of hysteropexy, 248 of which were traced. From August, 1909, to July, 1912, 199 additional cases were done, making a total of 508 hysteropexy operations. An endeavour had been made to complete the after-histories of the additional cases; about 120 of them had been traced. An analysis of these cases confirmed the conclusions previously arrived at—namely, that the general health was improved and symptoms relieved in over 90 per cent.; that the position of the uterus remained permanently good in over 95 per cent.; that hysteropexy when followed by pregnancy caused no subsequent complications of labour; and that pregnancy following hysteropexy did not disturb the position of the uterus. Of the 199 additional cases, 92 were operated upon for retroversion, 40 for prolapse, and 67 for procidentia. To get the best results in the last two groups, it was usually necessary to combine plastic operations on the vagina and perineum with the hysteropexy. It was desirable that operators should record the results of a large number of cases of other operations for uterine displacements.

Dr. HERBERT SPENCER was surprised at the frequency with which other gynaecologists performed ventrifixation, as he himself had only done it twenty-seven times in 1,000 abdominal sections. The reason why he had performed so few of these operations was that it was an unscientific operation by no means free from danger. Giles had had 4 deaths in 220 cases, Zweifel 5 deaths in 335 cases, 4 of the latter being deaths from septic peritonitis. Another reason which influenced him was that he had seen so many cases in which the operation had failed to relieve the symptoms. He noticed in Dr. Giles's valuable investigation into the after-history of these cases that 42.2 per cent. of those inquired into had pain after the operation, although in 32.5 per cent. it was stated that the pain was less than before. In his opinion both ventrosuspension and ventrifixation, as ordinarily performed, were unscientific and dangerous operations, giving rise to peritoneal bands, which on many occasions had caused strangulation of intestine. For procidentia in women beyond the menopause he considered ventrifixation a useful adjunct to colporrhaphy and perineorrhaphy, but care should be taken completely to close the peritoneum over the bladder.

Dr. ARCHIBALD DONALD remarked that Dr. Griffith had said that the operation should not be performed for retroversion when there were no local symptoms, but he did not state what he considered the symptoms of retroversion to be. The symptoms usually associated with retroversion were menorrhagia, metrorrhagia, and dysmenorrhoea, and many operations for retroversion were done in the hope of curing these symptoms, which were attributed to congestion induced by the displacement. There was, however, no reliable evidence that retroversion caused congestion, or that congestion could lead to changes in the endometrium causing menorrhagia, metrorrhagia, and leucorrhoea. The practice of stitching up the uterus for the cure of these symptoms was therefore unscientific. The speaker believed that in these cases there was an abnormal condition of the endometrium (endometritis), which was often the cause, but never the result, of the retroversion, and his own practice was to curette these cases and disregard the position of the uterus.

Dr. MACNAUGHTON JONES said he had never performed hysteropexy as advocated by Dr. Giles. Since 1905 the operation he had performed was as follows: A strong catgut suture, to last eighteen days, was passed on each side so as to include a loop of the round ligament, the parietal peritoneum, and the peritoneal fascia. The ligaments were then crossed so as to bring the ligature out at the opposite side; the ligatures were tied after closing the peritoneum. He did not think that *fixation* of the uterus should be practised during the child-bearing period of life.

Miss IVENS said that her operative experience was confined to 150 cases of Gilliam's operation. In the last 50 cases she had adopted Mayo's modification, the round ligament being drawn through the peritoneum at the internal inguinal ring, so that no abnormal slit was left, as in Gilliam's procedure. There had been one fatality, in a case complicated by chronic appendicitis. About 93 per cent. of the cases had been followed up, and the results were very satisfactory.

Dr. HANDFIELD JONES did not consider that cases in which the ovaries and tubes were removed for disease and the uterus then stitched forwards should be regarded as cases of ventrifixation, as in the vast majority there was no need to suture the uterus at all. He had found the operation of most use in women of middle age, who found relief from wearing a pessary, but after a reasonable time were unable to do without this support. He had seen much distress caused by the uterus being fixed at too high a level, and in these cases he had given the patients immediate relief by setting the organ free again. The patient should be prepared for the operation by ten days' treatment in bed with hot douches and glycerine tampons.

Dr. ARNOLD LEA said he had done the operation seventy-five times in 500 abdominal sections; the greater number of the cases were for backward displacement. He was opposed to treating those cases with pessaries, as the pessaries rarely had any curative effect, except in cases of simple retroflexion following confinement.

Dr. HUBERT ROBERTS believed that the greater number of cases of backward displacement did not require operative treatment. He considered that retroversion was often the first stage of prolapse, and if an operation was required at all it should be directed to repairing the pelvic floor. He had done the operation in a few cases, selecting Gilliam's operation in young women and ventrifixation in women who had passed the child-bearing period.

Mr. BECKWITH WHITEHOUSE expressed the opinion that in some centres there was a growing tendency to fix the uterus for inadequate causes. In his experience fixation often failed to relieve pain in the case of patients suffering from simple displacements, and care should be exercised in the choice of cases. He had seen a case of intestinal obstruction which was caused by a band of adhesions resulting from fixation of the uterus to the abdominal wall, and he did not regard this method with favour. His own preference was for the "sling" operation of Clarence Webster, in which a loop of the round ligament was drawn through the broad ligament on each side and stitched to the posterior uterine wall. He described in detail the technique he had himself been led to adopt.

Dr. J. S. FAIRBAIRN said that with regard to cases of simple backward displacement he agreed with a previous speaker that the operation should only be done when absolutely necessary. The difficulty was to decide what made it necessary, and he considered that those who did these operations by the hundred were still living in the mid-Victorian period of gynaecology when displacements were regarded as of supreme importance.

Dr. FARQUHAR MURRAY reported some clinical observations made by Mr. Bryden Glendining and himself upon the capacity of the bladder before and after ventrifixation. In the result half the cases showed an increased and half a decreased capacity after the operation.

Dr. WALTER TATE said that he had performed the operation of ventrifixation in 44 cases between the years 1900 and 1910 at St. Thomas's Hospital. In 25 the after-history had been followed, showing that seven had borne one or more children since the operation without any complication occurring during either pregnancy or labour. This good result he attributed to the fact that the fixing sutures were passed through the lower part of the uterus leaving the fundus free. In contradistinction to a previous speaker, he considered that the operation was specially called for in women in the prime of life who had to earn their living. But he only advised the operation in cases where pessaries and other methods of treatment had failed to relieve. He had also found the operation of use in some distressing cases of incontinence of urine from weakness of the bladder sphincter. By fixing the uterus the neck of the bladder was also supported, and in this way the relief of the trouble might be explained.

The PRESIDENT (Dr. Amand Routh) hoped that the speakers in their replies would more closely define the indications for those cases where ventrifixation was done for retroversion where the uterus was mobile. Accessory ventrifixation was in many cases a recognized and useful addition to a laparotomy performed for removal of appendages, etc., but he doubted if it was often a necessity apart from those cases. His primary ventrifixations did not amount to more than 3 per cent. of the abdominal sections, and they were almost entirely cases

where in addition to the retroversion one or both ovaries were also prolapsed. Here ventrifixation had its most useful application. Plastic operations, curettage, etc., had each their special indication in these cases of retroversion, and these minor operations often relieved the patient better than a ventrifixation. If these failed, then let ventrifixation be performed. It then became an operation of necessity. Drs. GRIFFITH, BRIGGS, and GILES briefly replied.

PATHOLOGICAL SECTION.

AT a meeting on March 18th, Dr. R. T. HEWLETT, President, in the chair, Dr. H. H. DALE read a paper on *Anaphylactic reaction* in the guinea-pig and its modification by strong salt solution. In the investigation the reaction of the rabbit's uterus was utilized, the part being kept in a water bath whilst its contractions were graphically recorded. Dr. H. R. DEAN recounted an *Attempt to preserve haemolytic complement in a permanent form.* It was only partially successful. One method already devised was to absorb it with filter paper and dry; another to salt the serum and keep it cold. The author's method was to cool fresh guinea-pig serum to 0° C., and add cooled absolute alcohol. The flocculent precipitate resulting was then dried; it was soluble in water or salt solution. The solution had but a slight haemolytic action on sensitized blood. It was the mid-piece of the complement factor only that was so obtained. It was not of use for haemolytic observation. Dr. J. A. BRAXTON HICKS described an *Unusual organism from a case of septicaemia* which he had isolated from the blood during life: it was a bacillus of the *proteus* group. The patient was suffering from septicaemia following the removal of a pelvic cyst. It was virulent to the guinea-pig. Mr. S. G. SHATTOCK exhibited a histological lesion which he named *Pseudotuberculosis hyalina.*

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT an ordinary meeting of the society, held on March 7th, Dr. G. P. SHUTER, President, in the chair, Mr. OSWALD L. ADDISON read a paper on *Syphilitic disease of bones and joints in children.* It seemed possible, and even probable, that many cases of syphilitic disease in children were acquired and not congenital. A confirmatory history of the disease in the parents could not be obtained in many cases, and the classical signs of congenital syphilis were conspicuous by their absence. This teaching of typical signs accounted for false diagnoses of a large number of cases, but within the last few years diagnosis, where there was suspicion, could be settled by a Wassermann reaction. The condition termed "syphilitic epiphysitis" appeared at first sight most marked about the joints, but in reality was most advanced at the ends of the diaphysis. It occurred at any time from birth up to the end of the first year—most frequently in the third month—and was seldom strictly monarticular. It was nearly always present in a syphilitic stillborn fetus, and, when observed in a living infant at birth, commonly affected all the long bones. In an older child it appeared at first in one joint only—most often the shoulder—but on careful examination more if not all the bones of the same or both arms were found affected. The lower limbs were much less frequently involved. A mother frequently stated that her baby was quite well until a few days previously, when it screamed on being washed or when the arm was moved. It was often quite healthy in appearance, except that one arm was limp and motionless—pseudo-paralysis. A further examination revealed some tenderness and slight swelling about the shoulder-joint, and not infrequently in a less marked degree about the arm, elbow, and forearm. Rapid recovery took place under suitable treatment—namely, complete rest of the affected limb for about a fortnight and with mercurial inunctions. The usual syphilitic bone affections seen in these children after the age of infancy were periostitis and osteomyelitis. The former led to the formation of nodes on the skull or long bones, and, if extensive, to a general thickening. Periostitis was uncommon under 4 or 5 years of age, but might occur up to 25, or even later. Although the subcutaneous bones, especially the tibiae, appeared to be affected most commonly, it seemed probable that this distribution was more apparent than real, for unsuspected nodes on the other long bones were frequently detected on *x*-ray examination. Tenderness and pain became severe in the later stages only. In the diffuse form affecting the tibia an apparent bending of the bone was produced from a deposit of new bone along the anterior border and on the subcutaneous surface. The diagnosis from new growth was not, as a rule, difficult, but from other chronic inflammations a correct diagnosis might be clinically impossible until a bacteriological culture or a Wassermann reaction had been obtained. Inunction and the administration of potassium iodide were necessary, but with great thickening and severe pain operative procedures gave the best relief. Osteomyelitis affected chiefly the long bones, and again the changes were most marked at the ends of the diaphysis. It was uncommon before the age of 9 or 10, and was often singularly painless, medical advice being sought on account of chronic sinuses or abscesses about the limb. As the most advanced disease was immediately beneath the epiphysial cartilage, interference with the growth of the bone was usual; sometimes overgrowth, but more often shortening resulted. Treatment by drugs was efficacious in the early stages, though where sinuses were present, vigorous operative treatment was necessary. Healing of the wounds was very slow on account of the secondary infection always present. The only two forms of syphilitic joint disease at all frequent in children were symmetrical serous synovitis (Clutton's joints) and gummatous synovitis. The former was not in his experience so common in children as the gummatous type, which was so often taken to be tuberculous. Gummatous synovitis, usually monarticular, sometimes multiple, mostly attacked one of the larger joints. The synovial membrane and periarticular tissues were swollen in a varying degree, there was no effusion into the joint, and muscular spasm and wasting were marked. In fact, all the signs associated with tuberculous disease were present. The *x*-ray appearances might be useful, but were not diagnostic. A rarefaction of the epiphysis was generally seen, and a superficial layer of new bone was often present at the end or ends of the adjacent diaphysis, while the focus of absorption frequently present in tuberculous disease was absent. This condition was not common under the age of 4, and, in the absence of the other signs of syphilis, a certain diagnosis could only be made by the Wassermann reaction. In the unusual event of several joints being affected, the diagnosis from rheumatoid arthritis had to be kept in mind. Under treatment perfect recovery of function was the rule, though overgrowth of the bones was not unusual. Symmetrical serous synovitis was commonly seen in the knee-joints. There was considerable effusion, with a varying amount of synovial thickening. The condition was always much more obvious in one joint than the other, and the symptoms were slight. X rays showed nothing characteristic, and the diagnosis was, as a rule, clear. Treatment was the same in both types of arthritis—namely, a splint, Scott's dressing, inunction, and iodide. Absorption of fluid and recovery of the synovial membrane were often slow, and relapses were apt to occur, but ultimately a normal joint was obtained. Dr. SYDNEY A. OWEN, in discussing Mr. Addison's paper, urged the employment of the Wassermann test, and pointed out that treatment with mercury was of less avail in converting a positive into a negative reaction in congenital syphilis than in the acquired disease. In infants under 1 year of age an atypical case of infantile scurvy might cause confusion, but the condition usually occurred at a later date than the so-called epiphysitis of congenital syphilis. In children over 1 year the hyperaesthesia, subjective pains, and pseudoparesis of rickets had to be kept in mind. Acute poliomyelitis, prior to the onset of definite palsy and loss of deep reflexes, might cause doubt for a short time. In considering acute rheumatism in childhood, commencing with the involvement of a single large joint, the diagnosis might be difficult in the absence of coexisting endocarditis, nodules, etc. Gonorrhoeal arthritis in infants, with co-existing ophthalmia, did not present difficulties. Dr. Owen also referred to Still's disease, haemophilia, erythema nodosum, and a case he had seen of Charcot's joint in a patient aged 16 years. In

some cases of acute leukaemia tender oedematous swellings at the lower ends of the long bones, especially the tibiae, occurred. Mr. McAdam Eccles remarked that a syphilitic joint in child life was present more frequently than was generally suspected, hence errors in diagnosis and faulty treatment. As the joint lesion might be the only manifestation of syphilis the true origin of the synovitis was easily overlooked. A skiagram always revealed some diaphysial mischief, and this mischief was usually primary, the joint lesion being subsequent. Dr. Hugh Thursfield found that epiphysitis of syphilitic origin was rare in babies over 3 months of age, and usually accompanied by enlargement of the spleen. Laryngitis was another, not rare, complication, sometimes sufficiently marked to render the baby aphonic. This combination of laryngitis and epiphysitis seemed pathognomonic. Clutton's serous synovitis was a distinct and fairly common lesion accompanying interstitial keratitis after the age of the second dentition. Another manifestation in congenital syphilis was enlargement of the lymphatic glands. Mr. Duncan C. L. Fitzwilliams insisted that the cause of the disease was a spirochaete, always acquired, either before birth, at birth, shortly after birth, or in later life. In the mature subject the disease passed through certain stages known as secondary and tertiary, while in the immature state the two stages were inextricably mixed. The incidence of epiphysitis was not so rigidly limited as Dr. Thursfield appeared to believe. Infantile scurvy Mr. Fitzwilliams had never seen under the age of 6 months. Craniotabes and Parrot's nodes were sometimes well marked in children who did not suffer from syphilis. Syphilitic diseases of bone were rarely found associated with the textbook signs of congenital syphilis, and if only one bone happened to be affected and the condition advanced, it might be difficult to exclude sarcoma without the aid of the Wassermann test. Gummatous changes in bones were by far the commonest cause of spontaneous fracture in children. Many "bone cysts" were really areas of gummatous destruction. Of the joint conditions, the joints full of fluid were the most striking, and being so characteristic were easily diagnosed. They were painless, and gave rise to no symptoms, hence their frequency was difficult to gauge with certainty. In the gummatous joint the synovial membrane was very thickened, as in tubercle, from which it was most difficult to distinguish it before the Wassermann reaction was introduced, but the presence of fluid in the early stages was diagnostic of syphilis. These joints were among the most resistant to treatment of all syphilitic manifestations. Mercury in these cases was more satisfactory than salvarsan. The Wassermann reaction should be regarded much in the same light as Widal's in typhoid, for it was an indication that the system had been infected previously, and apart from symptoms it was no evidence of active disease. Mr. N. Bishop Harman contributed some interesting statistics he had worked out on a large number of children between the ages of 5 and 16 years of age, who were more or less blind, owing to the inheriting of syphilis. The majority showed typical symptoms. Bone disease and joint affections of some kind or other were very frequent amongst them. In several the bone lesions appeared while the children were undergoing vigorous antisyphilitic treatment for relapsing eye symptoms. Mr. Rickard W. Lloyd, referring to Dr. Thursfield's remarks on the association of synovitis with interstitial keratitis, said he had observed it often enough in connexion with the knee-joints to cause him to seek for it whenever a case of interstitial keratitis came under his notice. The synovitis was not so painful as in ordinary cases of that disease, and as it existed only during part of the course of the keratitis Mr. Bishop Harman's important statistics minimized the frequency of the association of these two symptoms. He had also observed the association of synovitis and corneal inflammation in the course of gonorrheal rheumatism sometimes. Mr. Maynard Heath drew attention to the fact that in cases of syphilis where one of two parallel bones were obviously affected, an *x*-ray photograph generally showed some affection of the neighbouring bone, and he regarded this as strong evidence in favour of syphilis in doubtful cases. In conclusion, Mr. Addison replied to the various questions raised during the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Obstetrics.

At a meeting on March 7th the Chairman, Dr. H. Jellett, exhibited specimens from two cases of *Genital tuberculosis*, one of them showing tuberculosis of the tubes associated with carcinoma of the ovaries. In connexion with these cases he invited opinion as to whether tuberculous disease of the tubes was commonly accompanied by tuberculous disease of the uterus and whether such cases got well after removal of the tubes. Some authors stated that this was usual, but he had never found tuberculous disease of the uterus that did not eventually lead to serious complications. Dr. Tweedy said that, whether the uterus was or was not involved, he had known patients to get well after resection of the tubes. He instanced the case of a lady of good position who, after being six weeks married, was found to be suffering from very extensive tuberculous disease of the tubes, and to be exuding a thick, caseous material from the cervix, but whether the substance came from the tubes or the uterus he did not know. He removed the diseased tubes, and left the uterus and a small portion of the ovary, and for the last four years she had been in perfect health, and in no way suffered from tuberculous disease. Tuberculous disease of the tubes was frequently seen, but disease of the uterus was rarely met with. Dr. Sheill said that he had seen a pretty considerable number of cases of disease of the tubes of tuberculous origin, but he had seen but one case of definite tuberculous disease of the uterus. Dr. Jellett, in reply, thought that Dr. Tweedy's case did not throw any further light on the point raised, as it was not definitely known whether there was tuberculosis of the uterus in the case or not. He suggested, with a view to throwing further light on this important subject, that all operators should examine scrapings from the uterus in all cases of tuberculous salpinx. Dr. Sheill having recorded two cases of *Uterine rupture*, Dr. Gibbon FitzGibbon read a paper on six cases of *Gonorrhoeal vaginitis treated by vaccine*, five with good results. The sixth appeared cured, but relapsed or else had been reinfected. He considered that vaccines, to be effective, should be made from cultures grown fresh from the human host, but that they need not be autogenous. Local treatment, in combination with vaccine, was advisable, and probably necessary, certainly in the chronic cases with mixed infection. Dr. Sheill said he considered the paper of extreme importance from the point of view of treatment of gonorrhoeal infection in young children, as in such cases they were confronted with many difficulties in local treatment, and therefore if there was another means of treatment it should be pushed. He did not think local treatment should be done away with, but he considered vaccines a very useful adjunct. Dr. Tweedy considered Dr. FitzGibbon fortunate in having seen so much gonorrhoeal vaginitis. He had always found it very hard to be sure of the infection. Dr. Madill said he had seen a good deal of gonorrhoeal infection at the extern department of the Rotunda Hospital, and he had tried many varieties of local treatment. He thought the best results were produced by protargol. He was struck with the chronicity and difficulty of diagnosis in these cases. He pointed out that Professor Bumm had described five kidney-shaped intracellular diplococci, one of which was Gram positive and the other four negative to this stain, and the only difference he knew between these was by culture. He thought gonococcus was very difficult to grow. He went on to describe the methods adopted at Wertheim's clinic for making this vaccine, and said that the dosage given was rather smaller than that indicated by Dr. FitzGibbon, the dose being 5 million of a mixed vaccine every forty-eight hours, followed by autogenous gonorrhoeal vaccine. In most cases good results were obtained, and in cases where the results did not materialize they were controlled by estimation of the opsonic index. No case was considered cured until the microscope failed to find anything of the nature of gonococcus in the secretions. Dr. Rowlette said that in the present state of our knowledge of vaccines it was of importance that full details should be given in all cases reported, and he therefore considered that Dr. FitzGibbon's paper was of great assistance as a guide to treatment. There was great difficulty in treating cases of gonorrhoea in the

female owing to the ease with which the infection became mixed. He did not think that the gonococcus disappeared for a considerable time, but it became crowded out by other organisms, and was not easily found. In some cases of gonorrhoea in the male that came under his notice it was found necessary to treat with staphylococcus after treating with gonococcus vaccine. A point of importance was that the vaccine should be made from a fresh culture. This he considered of more importance than that the vaccine itself should be fresh, although vaccine kept for a long time did lose in efficacy. He believed that the slide shown by Dr. FitzGibbon was undoubtedly one of gonococcal infection. Dr. O'KELLY said that in some cases it was very questionable whether the infection was really gonococcal. He never succeeded in getting gonococcus to grow. Dr. HENRY MOORE said that in the cases in which vaccine was most useful—namely, at the very beginning of an attack, or in old-standing cases of gleet—an autogenous vaccine was impossible. His method of obtaining serum was to get a vaccine once a month from a male case on the second day of the urethritis. If in doubt as to the cause of an old-standing discharge or the cure of a patient who has suffered from gonorrhoea, he gave from 15 million to 30 million, and examined the resulting discharge, if any, twenty-four hours after. In old-standing cases of posterior urethritis no local treatment was effective without vaccine, and the serum should not be more than four weeks old.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting on March 13th, Mr. ROBERT JONES, President, in the chair, Professor ERNEST GLYNN, Dr. LISSANT COX, and Miss POWELL, in a paper on *Methods of standardizing vaccines*, summed up their conclusions as follows: (1) Wright's method frequently underestimates the strength of bacterial vaccines by 100 per cent. or more. This is undoubtedly mainly due to the unequal distribution of the bacteria and red blood corpuscles in different parts of the smear. (2) The plate culture method is cumbersome and underestimates the strength of bacterial emulsion by 100 per cent. or more when prepared from cultures twenty-four hours old, as many of the bacteria are dead; and also because it is impossible to obtain an absolutely homogeneous emulsion with every bacterium separated from its fellow. (3) The haemocytometer chamber method, using an oil-immersion lens and some weak stain, is the most satisfactory; and is more accurate than either Wright's or the plate culture method. (4) The ordinary coverslip used in microscopical preparations is inadmissible for the ordinary haemocytometer chamber, which is 0.1 mm. deep, as it is neither rigid nor optically plane. A reinforced coverslip, however, 0.13 mm. thick, would be both rigid and optically plane and suitable for all ordinary achromatic oil-immersion lenses when employed with chambers 0.1 mm. deep. (5) A counting chamber 0.04 or 0.02 mm. deep, however, is superior to the one usually employed, for three reasons: (*a*) The greater ease with which the bacteria adhering to the under surface of the coverslip may be counted; (*b*) the rapidity with which the bacteria settle; (*c*) the improved definition of the bacteria. (6) Weak carbol thionin is the cleanest and most satisfactory staining solution. The authors added that they were unable at present to express any opinion with regard to the value of the gravimetric method. Dr. BLAIR BELL gave a lantern demonstration of colour photomicrographs illustrating experimental work in which he had been engaged in connexion with the genital functions of the ductless glands. The specimens shown by various members included one of cirrhosis of the liver in a carthorse, by Professor GLYNN.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 14th, Dr. WALTER SWAYNE, President, in the chair, Dr. CAREY COOMBS, in a paper on *Adventitious pericardiac sounds*, pointed out the frequent occurrence in cases of cardiac valvular lesions of pulmonary crepitations over the third left interspace in front, particularly in cases of mitral stenosis. They were probably due to collapse of the lung margin, owing to pressure of the enlarged conus arteriosus, together with hyperaemia, and were of interest in that they not uncommonly led to a mistaken diagnosis of pulmonary tuberculosis. The stationary condition of the signs, together with the absence of tubercle bacilli in the sputum, were sufficient to negative the presence of tuberculosis. Dr. MICHELL CLARKE remarked that the limitation of these crepitations to the first deep inspiration during auscultation pointed to their being due to a condition of atelectasis. Dr. J. R. CHARLES said that, in an examination of some thousands of *post-mortem* records, he had found the coexistence of pulmonary tuberculosis and mitral stenosis to be a rare occurrence. Dr. CHARLES also, in a paper on the *Etiology of migraine*, propounded the theory that the symptoms of migraine were due to a transient swelling of the pituitary gland. Such swelling was known during pregnancy, and from the anatomical position of the gland it was conceivable that if swollen it might show effects on the optic nerves and those in the walls of the cavernous sinus. The vasomotor effects might be explained by an increased secretion from the posterior lobe. Mr. ELWIN HARRIS did not think that the theory could explain in his own case the occurrence of hemianopsia half an hour before the headache. Dr. CAREY COOMBS did not see how the association of migraine and epilepsy could be explained by this theory. The following were among the exhibits:—Dr. WATSON-WILLIAMS: (1) A specimen from a case of *Cerebro-spinal rhinorrhoea*, in which there was an opening found in the dura and bone of the anterior fossa *post mortem*, death occurring from meningitis from a complicating frontal sinusitis. During life the cerebro-spinal fluid had caused a fluctuating swelling at the inner orbital margin, thus simulating an ethmoidal mucocele. (2) A case in which an extensive *Epithelioma of the larynx* had been removed a year previously. There had been no recurrence, but there was some stridor from cicatricial contraction. Mr. HUBERT CHITTY: An infant aged six weeks, with *Congenital absence of the ulna*, of two digits and their metacarpals on the left side, while on the right one digit and its metacarpal were absent.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting in Sheffield on March 14th, Dr. FOTHERGILL (Manchester), President, in the chair, Dr. CATHERINE CHISHOLM (Manchester), in a paper on a comparison of *Menstrual disturbances in adolescence and adult life*, showed that more of the latter suffered discomfort during menstruation. Constipation, sedentary employment, lack of exercise, overwork, and great mental strain appeared to produce menstrual discomfort. In very few instances did the menstrual discomfort interfere with the working capacity. The appearance of pain indicated a pathological condition which ought to be investigated and treated as soon as it developed. Dr. ARNOLD W. W. LEA (Manchester) described three cases of *Kyphotic pelvis* which he had treated by Caesarean section. Skiagrams of the three pelves were shown. All had very narrow outlets, 2 in. to 2¼ in. All the patients and children recovered. A pelvimeter for measuring the outlet of the pelvis was also shown and described. The following were among the exhibits:—Dr. HELLIER (Leeds): (1) Two specimens of *Ruptured ectopic gestation*, one of them of the interstitial variety; (2) a specimen from a case of septic miscarriage infected by *B. aerogenes capsulatus*. Dr. BARBER (Sheffield): A case of *Torsion of the pedicle of a subperitoneal myoma*. Dr. ARNOLD W. W. LEA (Manchester) reported (1) a case of Caesarean section for *Concealed accidental haemorrhage*; the uterus was not removed and the patient made a good recovery. (2) A case of *Panhysterectomy for interligamentous myoma*. Mr. CUFF (Sheffield) reported a case of *Severe metrorrhagia* in a young woman. Mr. MILES H. PHILLIPS (Sheffield) showed a case of *Ruptured uterus* treated by vaginal hysterectomy. The vaginal route and clamps were used, as the uterus was infected and the patient collapsed. The patient made a good recovery and had no further rise of temperature.

ON March 5th a bill was submitted to the General Assembly of the State of New York providing that all artificial or patented infant foods shall be approved by the State Health Commissioner. It is further required that every certificate of death of an infant under 1 year of age shall be supplemented by a statement signed by the attending doctor as to the method of feeding employed.

Reviews.

FOOD AND DIETS.

This is a revolutionary age in which use and wont have lost their authority, long-standing custom and the experience of countless generations are set at naught, and the most extravagant doctrine gets an attentive hearing if it adopt the livery of the "new age" and professes to instruct the modern generation how to suck eggs in a better fashion than that known to its grandmothers. In his work, *Modern Theories of Diet*,[1] Dr. Alexander Bryce reviews these doctrines critically with good sense and in the light of recent science, writing in a style so plain and vigorous as to make the book not only a valuable source of information to medical practitioners, but useful, instructive, and intelligible to the public too apt to accept the guidance of lay persons whose qualifications for such a task exist solely in their own conceit. The author has been so wise as to seek and so fortunate as to obtain the assistance of experts in the presentment of the difficult and and ever-changing theories of metabolism, this portion of the book having been revised by Dr. Fraser Harris, Professor of Physiology in the University of Halifax, Nova Scotia, while Dr. E. P. Cathcart, Lecturer on Physiological Chemistry in the University of Glasgow, has looked over the whole manuscript, so that in these important respects the accuracy and soundness of the book is sufficiently guaranteed. Dr. Bryce has been for many years a student of dietetics and has personally investigated the dietetic theories of America, the birthplace of most of the heterodoxies which form his subject matter, so that he has a special claim to be heard. His first two chapters discuss theories of metabolism so clearly as to enable the educated reader to appreciate the subsequent argument. Chapters III and IV deal with vegetarianism and the low protein diet. In spite of his respect for Professor Chittenden, to whom he dedicates the book, and his acceptance of the conclusion that the Voit standard is unduly high, he uses Major McCay's observations to emphasize the dietetic importance of animal protein, and the danger to the race as well as to the individual of allowing sentimental or other arguments to prevail against experience. His conclusion here, as throughout the book, is in favour of moderation. While admitting individual differences, he leans on the whole to the opinion that in England and America a reduction in the quantity of flesh food tends towards better health and greater efficiency. He is, however, unsparing in his exposure of the fallacies and inconsistencies of the current vegetarian and lacto-vegetarian arguments, and disposes most effectively of the claim that flesh eaters are more prone to disease or possess diminished power of resistance to morbid influences than those who abstain. He states from personal observation of the vegetarians of Battle Creek that they are in nowise less prone to "colds" than are flesh eaters, but he expresses surprise that Americans, with their habit of three meat meals a day, can adapt themselves so easily to a vegetarian regimen. While recognizing the practical value of Haig's teaching, he rejects his theory. Hare's and Salisbury's diets are classed as partial starving cures, and the value of these under adequate medical supervision is allowed. He shows the same discrimination in considering the claims of "Fletcherism," while very properly emphasizing the extreme importance of mastication as the starting point of good digestion. A whole chapter is devoted to the "Fasting Cure," and its dangerous side is plainly exposed. The last chapter is written to expand and impress upon his readers the principle of moderation in dietetics as containing the whole root of the matter. Those who are engaged in family practice frequently encounter faddists primed with arguments derived from pamphlets or periodicals published for the purpose of propagating peculiar doctrines, and Dr. Bryce's book forms an arsenal from which suitable and overwhelming answers may be drawn. His attentive readers will acquire the knowledge upon which to found themselves; they will learn what should be admitted as true and what denounced as false in doctrine or dangerous in practice. While the healthy may err by eating too much, many of the ailing go further wrong in the opposite direction by eating too little.

We noticed Part I of Dr. Craik Taylor's *Diet Charts*[2] a few months ago (see Journal, December 28th, 1912, p. 1751), pointing out the absence of any adequate space for indicating quantity and the excessive recommendation of proprietary articles. This second part is open to the same criticism—for example, six kinds of patent bread are named, but ordinary bread is omitted; while other things are suggested that are unfamiliar, and in some instances are given undue prominence. The principles on which the author constructs his tables is not quite easy to understand. In the dietary for acute nephritis he says "that it is not good practice, nor is it suitable, to feed your patient on milk alone." We would not quarrel with this statement if the author meant to prefer milk diluted with barley water or soda water, or to give arrowroot or bread and milk, and the like, but he goes on to say: "Add cream, plasmon or sanatogen, one of the proprietary 'milk foods' or 'malted milk,'" thus introducing needlessly expensive specialities into the diet. His direction for making imperial drink does not agree with the classical formula, which is half an ounce instead of a teaspoonful of cream of tartar to a pint of water. The dietary for subacute and chronic nephritis might aim at excluding purins, but tea, coffee, oat flour, or oatmeal, meat, and fish are allowed. Alcohol is suggested, cheese is forbidden, and potatoes and eggs are omitted altogether. The medical attendant is told to regulate the amount of meat by the output of albumen, although in advanced contracting kidney this may be a mere haze, and nothing is said about the output of urea. Under diabetes, von Noorden's practice with regard to his oatmeal diet is to be followed by "two days of carbohydrate-free food" instead of by two vegetarian days. Why is chutney, which is often very sweet, allowed, and Burgundy and sherry, which always contain a good deal of sugar? Why omit codfish? Why allow grapes, which are full of sugar? Why exclude potatoes when agreeing that carbohydrates may be allowed? Why not mention cream with tea and coffee, as milk is omitted? And why exclude cheese? Why not point out that it is absolutely essential to fix the quantities? Finally, under the diet of school children, why recommend "sweet potatoes," which are not often seen in this country? We have said enough to show that in our opinion these tables require a good deal of revision before they can fulfil their purpose of guiding practitioners in the construction of dietaries.

Dr. W. Sternberg's book, *Diät und Küche*,[3] is a strange medley of ancient Grecian philosophy and metaphysics with the physiology of taste and cooking. The author disbelieves in the modern physiological researches which have demonstrated the worth of foodstuffs in terms of energy. He will have nothing to do with computations of diets in calories. Taste and mental effects of foods are for him the only side of the subject worth considering. It is true that the most recent researches have demonstrated that it does not suffice to measure a diet singly in calorie value and in the proportionate worth of carbohydrate, fat, protein, and salt. There must be considered in addition the vitamines, the subtle substances which exist in fresh food, outer layers of wheat and rice berries, milk, etc., destroyed by modern methods of milling and by the high sterilization temperatures often used in canning. Dr. Sternberg, however, does not deal with them—for him the psychic effect derived from good cooking is the factor of supreme importance. Flavour promotes digestion and appetite, but in modern civilized states it also often promotes over-eating and consequent ill health. But bad cooking also causes ill health and is moreover wasteful. So that the only wise course must be to make the psychic effort necessary to practise moderation.

[1] *Modern Theories of Diet and their Bearing upon Practical Dietetics.* By Alexander Bryce, M.D., D.P.H.Camb. London: Edward Arnold. 1912. (Demy 8vo, pp. 383. 7s. 6d. net.)

[2] *Diet Charts for the Use of Physicians.* Part II. By J. Craik Taylor, M.B. London: Suttley and Silverlock. 1913. (Post 8vo, 1s. net.)

[3] *Diät und Küche; Einführung in die angewandte Ernahrungs-Therapie.* Von Dr. W. Sternberg. Würzburg: Curt Kabitzch. 1911. (Sup. roy. 8vo, pp. 200. Mk.5.)

Dr. DONALD STEWART has written a little book in simple language concerning *The Essentials of Food*.[4] He intends it to be "a correct summary of present-day knowledge about food." He neither writes as a first-hand expert nor as one who has deeply read in his subject, but draws largely on the writings of the late Dr. Pavy and on Dr. Robert Hutchison's well-known book on food and dietetics. From the latter he has borrowed many tables representing the percentage composition of the foodstuffs. In the attempt which the author makes to deal with the chemical nature of foods he is not particularly happy. "An element in chemistry," he says, "is the first principle beyond which or lower than which it is not possible to go." "In recent years the elements arson (*sic*) and radium were discovered." "Fat is made up of carbon, hydrogen, and oxygen, and written thus in chemistry: C HO." In regard to the composition of water, H_2O, "the figure 2 under the H means not two atoms of the hydrogen, but two elements have to be taken with one of oxygen to form water." On page 25, he says, "gelatine contains about 84 per cent. of albumen." He frequently uses the word "salines" in place of "salts" in dealing with the composition of foods. He speaks of the production in the intestine "of the evil-smelling gases, skatole, indole, and phinol" (*sic*). We are told that proteid signifies "the highest value as a food; perhaps albumen comes next to proteid in value." He gives an antiquated classification of the nitrogenous substances in foodstuffs—"fibrine in the albumen in cereal seeds," etc.—and he says that protein is chemically regarded as the base and chief of them all. "Protein contains the elements C H NO, and sulphur, but not phosphorus." Dr. Stewart seems unaware of the fact that "protein" is the term now used in place of "proteid." On page 138 he writes: "Our object ought to be to apply such heat that the starch of the cereals shall be turned into gelatine." Again, the reader would be led to understand from the text that the 118 grams of protein of the Voit diet is contained in about 118 grams or 4 oz. of meat, in place of five times that amount. Apart from these errors, the little book is written in such a way as to inculcate the valuable doctrine of moderation in eating, plain living, and simple life—a doctrine much wanted nowadays when a large part of the wealthier people daily over-eat, while the very poor are badly nourished. The author cites from Dr. Pavy's writings the miller of Billericay, who in the eighteenth century lived for sixteen years on 16 oz. of flour per diem, made into a pudding with water, no other food or liquid being taken. This diet contained half of the protein, one-sixth of the fat, and two-thirds of the carbohydrate in Voit's diet. The miller could not have lived on white flour, for this lacks the essential active principles found in the germ and outer layers of the wheat-berry. Dr. Stewart does not mention these subtle active bodies, and implies that protein, carbohydrate, fat, and salts include everything necessary in a diet. The causation of beri-beri by a diet of polished rice, and its cure by extract of rice polishings, show that there is far more to be considered in food than he dreams of. The author supports Chittenden's conclusions, and wisely urges moderation in animal food, especially after youth is past. The most interesting tables in the book are those in which he contrasts the diets of the inmates and the attendants at the Aylesbury Union, Borough Asylum (Derby), and Bucks Asylum (Stone). At the Aylesbury Union the ordinary diet of the inmate is: Bread 18 oz., meat 4½ oz., vegetables 12 oz., milk 20 oz., gruel 1 pint, oatmeal 1½ oz., with a calculated value of protein 98 grams, fat 38 grams, carbohydrates 364 grams; while that of the attendant is; Bread 16 oz., flour 2⅔ oz., meat 16 oz., potatoes 16 oz., tea ½ oz., butter 1¼ oz., sugar 2⅔ oz., cheese 1½ oz., beer 2 pints, giving protein 168 grams, fat 146 grams, and carbohydrates 536 grams. We have not the least doubt that the former diet would keep the attendants in better health than the latter—if it is really eaten—and that 16 oz. of meat as well as 1½ oz. of cheese is a most unnecessary and extravagant allowance. We believe that it would be found at all public institutions the attendants are over-fed. An allowance of beer nowadays is quite unnecessary. We know of the case of a most capable cook who lost her situation at an important institution from drunkenness. Her two kitchenmaids did not take their allowance of beer, and she had the six pints a day.

[4] *The Essentials of Food.* By Donald Stewart, M.D. London: Bale, Sons, and Danielsson. (Cr. 8vo, pp. 190. 3s. 6d. net.)

A SYSTEM OF SURGERY.

MR. C. C. CHOYCE promises a *System of Surgery*[5] in three volumes of moderate dimensions, and, if we may take the first and second volumes as an earnest of the whole, we have reason to congratulate ourselves that British teachers and writers are behind no other nation in the production of high-grade finished work. The contributors are carefully selected for well-tried qualities in teaching and in practice. The list contains the names of many of the younger generation of surgeons, metropolitan and provincial, who have established both local and general reputations.

Volume I is devoted chiefly to the consideration of general surgery and surgical pathology. The latter subject, in which Professor J. M. Beattie has collaborated as pathological editor with Mr. Choyce, is presented in the most thorough business-like manner, with no dreary over-elaboration of detail and no uncalled-for speculative wandering. Every subject is dealt with by authors "whose special knowledge and experience entitle them to write with authority." For example, the four articles on syphilis and venereal diseases are from the pens of Colonel Lambkin, Major Gibbard and Major Lawrence Harrison, Mr. J. E. R. McDonagh, and Mr. C. A. Leedham-Green; general anaesthesia is by Dr. J. Blumfeld; hydrophobia by Professor Calmette, of the Pasteur Institute, Lille.

We make no attempt to differentiate in merit where all is of the best, but the article on tumours, by Mr. Raymond Johnson and Mr. T. W. P. Lawrence, is among the most satisfying work in this department of surgery we have met with. The authors have preserved the only classification—the clinical—which appeals alike to surgeons and patients. Amongst benign tumours they have unhesitatingly placed myeloma or so-called giant-celled sarcoma. There can be now little doubt that these tumours do not conform to most of our ideas of malignancy, in particular in the absence of metastasis. Giant cells may be found in sarcomatous tumours of bone, and these are malignant enough, but the comparatively common medullary giant-celled sarcoma is properly removed from amongst the sarcomata. In their description we should have liked a little more discussion on the relation to osteitis fibrosa and "aneurysm" in bone, and also as to the possibility of the whole three being different stages of one pathological process, as suggested by Bloodgood.

The paper on *x*-ray examination is by Dr. W. Ironside Bruce. The series of skiagraphs reproduced is exceedingly neat and compact. A few representative pictures of the bismuth meal in the intestinal tract might usefully have been added. Dr. Bruce reminds his readers that *x*-ray examination must not displace the older and well-tried clinical methods of investigation, but must be regarded as supplementary.

In the paper on "Constitutional Disturbances associated with Trauma," Mr. Russell Howard makes no attempt to define shock, and for practical purposes will not distinguish shock and collapse. His paper is a study of the causes of shock and its clinical phenomena. It is a well-informed article, and follows closely the experimental work of Crile and other very recent writers.

The second volume of the *System* deals with regional surgery, and here again we find that the contributors are mostly all well-known surgeons who have high reputations as teachers in their own schools. It is a decided advantage that the authors should be widely distributed geographically, and the specimens lavishly and beautifully illustrated in the text are selected from so many museums. The breast and its surgery is in the able charge of Mr. Sampson Handley. Readers have, therefore, at first hand the theory of spread of cancer by permeation fully and lucidly stated. It is of interest to note how the permeation

[5] *A System of Surgery.* Edited by C. C. Choyce, B.Sc., M.D., F.R.C.S., Dean of and Teacher of Operative Surgery in the London School of Clinical Medicine; Assistant Surgeon to the Seamen's Hospital, Greenwich. Pathological Editor, J. Martin Beattie, M.A., M.D., C.M., Professor of Pathology and Bacteriology in the University of Sheffield. In three volumes. Volume i, Surgical Pathology, Tumours, General Surgery. Volume ii, Surgery of Regions. London and New York: Cassell and Company, Limited. 1912. (Med. 8vo, vol. i, pp. 979, plates 84, figs. 250; vol. ii, pp. 1105, plates 20, figs. 375. 21s. net each volume.)

theory may explain much that has not been understood. For example, Paget's disease is to be regarded as an eczema following blocking and fibrosis of lymph vessels of the skin and areola, and is comparable to the sodden eczematous skin in varicose eczema and to the eczema of elephantiasis.

Mr. A. Miles writes the chapter on the intestine, hernia is by Mr. Lawrie McGavin, "The Upper and Lower Urinary Tract" by Mr. J. W. Thomson Walker, and "The Female Genital Tract" by Mr. Victor Bonney. In Mr. Cyril A. R. Nitch's paper on "Malformations of the Face, Lips, and Palate" too much space has perhaps been allotted to description of the Brophy and Lane operations for cleft palate, and correspondingly too little to the Langenbeck operation. This is the more noticeable that the writer's opinion is that the Langenbeck operation performed between two and three years gives the best result in the majority of cases. A thorough and minutely detailed description of the operation, noting all the little things which make for success, would have rounded off very nicely an otherwise good article. The admirable work of Mr. James Berry on this subject is not referred to.

The general appearance of these volumes is substantial but not heavy. Reading is greatly assisted by free use of bold type to indicate new paragraphs and subjects. The pictures are of uniform excellence; they are mostly original—the coloured plates in both volumes are worthy of special praise. We have found only two typographic errors, and these are in the illustrations: in Fig. 2 of plate opposite page 638, vol. i, "tarsus" should be "carpus," and on page 334, vol. i, the picture is inverted.

One sometimes feels that too many surgical books are being published, but there is room for an "All British" System of Surgery. Mr. Choyce's work will soon make a place for itself, not on patriotic grounds only, but because of its real merit.

DISEASES OF THE MENINGES.

THE French have always devoted much study to diseases of the meninges, particularly since Quincke's application of lumbar puncture in 1890 placed at their disposal a fluid well adapted for cytological examination. The latest discoveries and views are summarized in a recent volume[6] of Gilbert and Thoinot's new edition of Brouardel and Gilbert's well-known *Traité de médecine et de thérapeutique*. Acute meningitis, by Hutinel and Voisin, covers the first 273 pages, or more than two-thirds of the whole. It begins with a general account of the condition; then follow chapters dealing with tuberculous meningitis, epidemic cerebro-spinal meningitis, acute suppurative meningitis, serous meningitis and meningism, the etiology of meningitis (some two and twenty different bacteria are enumerated as being capable of causing it), and a general discussion of its diagnosis. Chronic meningitis is described in fifty pages by Klippel, with meningeal haemorrhage; and the last sections, by Claude and Lévy-Valensi, describe the disorders of the spinal meninges, including the rare syndrome of massive coagulation of the cerebro-spinal fluid first described in 1903 by Lépine. No mention of the meningitis seen in acute infantile paralysis seems to be made. The book is very readable, as French scientific works so generally are; it is fully up to date in its references to the French literature, and has a number of useful figures. A certain tendency to overstatement may be noted, as when, for example, we read that an inherited neuropathic tendency is the chief factor in predisposing children to die of tuberculous meningitis (p. 65), that the parents are often very intelligent and have used their brains to excess, that the children are often very wide awake, precocious, with large heads and highly developed cranial circulations but slender bodies, children whose intelligence has been too soon fatigued. Such paragraphs would come better from the pen of a speculative sentimentalist like Maeterlinck; they strike a false note in a scientific discussion of the etiology of tuberculous meningitis. No index is given and no list of figures; the book is well arranged, full of interesting facts and details, and should find a place in all medical libraries and on the bookshelves of neurologists.

[6] *Maladies des méninges.* Par Hutinel, Klippel, H. Claude, R. Voisin, et Lévy-Valensi. Fasc. xxxv, Du nouveau traité de médecine et de thérapeutique, de Gilbert et Thoinot. Paris: J. B. Baillière et Fils. 1913. (Roy. 8vo, pp. 384; 49 figs. Price 8 fr. paper, 9 fr. 50 bound.)

NOTES ON BOOKS.

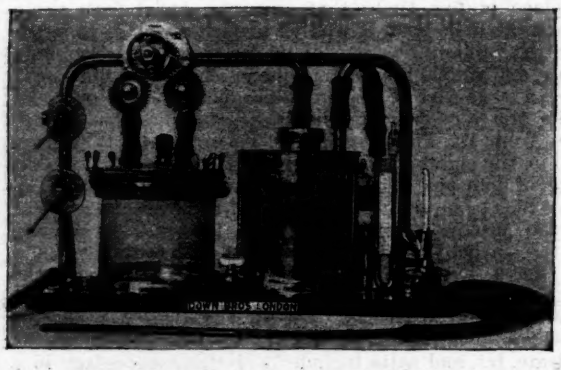
PROFESSOR DASTRE is the general editor of a series on *Questions biologiques actuelles*, published by A. Hermann et Fils, and the first volume which has come before our notice is one on the *Parathyroides*, by LEWIS MOREL.[7] The author concludes that the experimental removal of these glands causes an autointoxication, the most usual but by no means inevitable result of which is tetany, that acidosis is a constant and fatal condition of parathyreopriva, an acidosis characterized by excessive elimination of nitrogen, mineral salts, and organic acids, such as diacetic and lactic, an increase in the ammonia contents of the blood, and diminution in the power to use dextrose. The antitoxic functions of the liver are gravely disturbed by removal of the parathyroids. All this is rendered difficult of acceptance by the fact that removal of the parathyroids in some animals has no grave effect. We think the English reader will find the whole question treated in a clearer and more convincing manner by Professor Swale Vincent in his recent volume on the internal secretions.

[7] *Les Parathyroides.* By Dr. Lewis Morel. Paris: A. Hermann et Fils. 1912. (Roy. 8vo, pp. 344. Fr.10.)

MEDICAL AND SURGICAL APPLIANCES.

Portable Apparatus for the Intratracheal Administration of Ether.

DR. R. E. KELLY (Liverpool) writes: The principle of the intratracheal administration of ether is now well known. Warm, moist, and etherized air is supplied to the patient at the bifurcation of the trachea by means of a catheter passed through the glottis. The air is under pressure, and as the catheter is only half the size of the glottis, the excess of air escapes easily between the catheter and the glottis. It remains, however, under sufficient pressure to expand the lungs, and being constantly renewed suffices for respiration. Though primarily designed for the performance of surgical operations on the thorax, the apparatus here illustrated possesses further advantages in general surgery.



A B C D E

Fig. 1.—Etherization apparatus.

1. By its means thoracic surgery is rendered possible without resorting to the cumbersome and costly positive and negative cabinets.
2. In mouth, nose, and throat operations there is no danger of the inspiration of blood, mucus, or pus.
3. In goitre operations air is supplied below the tracheal obstruction.
4. In head and neck operations the anaesthetist is well out of the way of the surgeon.
5. It renders easy, from the slight respiratory movements, many operations on the upper part of the abdomen; and
6. It is a most efficient artificial respiratory apparatus.

The apparatus consists of two parts. The first part is for the production of the current of air. Where the electric current is available, this current of air is produced by a rotary blower actuated by an electric motor. The motor is $\frac{1}{8}$ h.p., and is made to run for the particular voltage obtainable. The blower runs at from 50 to 1,000 revolutions a minute, the usual rate being about 500. Both are enclosed in a box measuring $16 \times 10\frac{1}{2} \times 10\frac{1}{2}$ in. Where the electric current is not available, its place is taken by a foot bellows which will give the pressure of air required, with very little effort.

The second part of the apparatus is that which etherizes, warms, and moistens this current of air. It consists of, first, the ether chamber A—a glass jar with a metal lid screwed airtight over a leather washer. The

lid has two openings, the entry dipping into the chamber for about an inch and the exit flush with the lid. By a simple arrangement of taps gearing into one another, the current of air may entirely run over the surface of the ether or miss the ether altogether. When the taps are turned to any intermediate position, then a part only of the air is etherized. In this way a graduated dose of ether is obtained. This etherized air is now warmed by passing

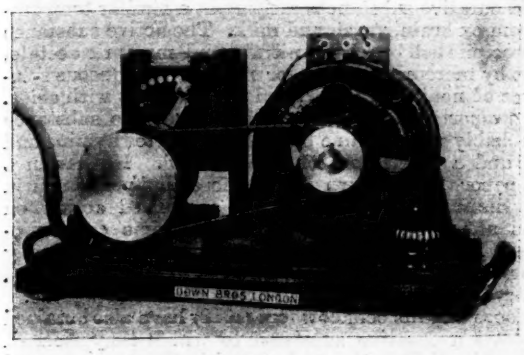


Fig. 2.

through a coil of piping immersed in hot water in the chamber B, after first passing over a moistened piece of gauze in a little container standing in it. Before the air reaches the manometer D, it has in its circuit a safety valve C. This merely consists of a bottle of mercury into which dips a glass tube in circuit. According to the depth to which the glass tube is immersed this safety valve will blow off at any pressure. Just before the air leaves the apparatus there is also inserted in its circuit a thermometer E. In the circuit are placed three taps. The first two are placed before the ether chamber. The first one is to reduce the pressure if it is too high, and the second is for the purpose of putting oxygen into the circuit should it be desired. Before the air passes to the patient there is a third tap which will reduce the pressure instantly to zero. This manœuvre is done every few seconds or so in order to allow the large veins in the thorax to fill. The whole of the second part of the apparatus consists of plated metal tubing with no constrictions, and with as few bends as possible; it is constructed on a board measuring 18 × 7 in. The apparatus is made by Messrs. Down Brothers, St. Thomas's Street, S.E.

Nova et Vetera.

THE WATER CURE OF HYDROPHOBIA.

FOR many centuries water applied externally and internally was regarded as a specific for hydrophobia. It is related that the poet Euripides, having been bitten by a mad dog, the Egyptian priests cured him by plunging him into the sea. The fear of water being a symptom of rabies, it was argued that the way to overcome this dread was the application of water or its introduction into the system. A surprise bath was recommended by Celsus, who says: "When the illness has reached this point (oncoming of the symptom hydrophobia) there is scarcely any hope. The only remedy that can be tried is suddenly to throw the patient when he does not expect it into a piscina, and let him go to the bottom if he cannot swim, so that he may drink. Then he should be taken out." Dr. Roshem, in an article on the subject which appeared in a recent number of *Paris Médical*, says the Arab Jahiah-Ebn-Serapion, who lived at the beginning of the ninth century, devised several methods of introducing water into the patient's system. A favourite plan was to take a little block of honey hollowed out in the middle; this hollow was filled with water, and the opening closed with honey. This sweetmeat the patient swallowed without knowing that he was taking water. Intravenous injections of water were recommended even in the nineteeth century, and seem to be based on this theory of surprise. The bath was long fashionable. Sea baths are mentioned from the thirteenth century in almost all works which deal with hydrophobia. During the first six years of the seventeenth century there appears to have been an epidemic of hydrophobia in Paris. It was very severe at the beginning of May, 1604. At that time sea bathing was considered the best cure. Police orders against stray dogs were issued and they were killed without mercy. Dog owners had to keep their animals shut up, infraction of the law being punished by a heavy fine. Yet there were many cases of the disease, and Dieppe was the fashionable resort for the cure. In the early years of the seventeenth century Henry IV's dog Fanor, which was supposed to be suffering from rabies, was sent to Dieppe to be treated by sea bathing. The event was made the occasion of great festivities given by the Sieur de Sigogne as long as the dog was at Dieppe. It is a pity that history does not tell us whether the illustrious patient got well. In 1671 Madame de Sévigné wrote thus of certain ladies of the Court of Louis XIV:

> For the rest, if you believe that the Queen's maids of honour are mad you will believe rightly. A week ago Madame de Ludres, Coëtlognor, and the little Rouvroy were bitten by a little bitch belonging to Théobon. This little bitch died rabid, and so Ludres, Coëtlognon, and Rouvroy started this morning for Dieppe to be thrown three times into the sea. The journey is sad. Beuserade was in despair about it. Théobon did not wish to go, though she had been slightly bitten. The Queen does not wish to have her about her until it is known what is going to happen. Don't you think, my dear, that Ludres resembles Andromeda? As for me, I see her tied to a rock and Fréville on a winged horse killing the monster. *Ah! Zezu, matame te Grignan, l'étranze zose t'être zetée toute nue tans la mer!*

Gui Patin, writing to Falconnet on September 17th, 1670, expressed disbelief in the water cure of hydrophobia, but he could do nothing against the fashion, which still prevailed in the middle of the following century. In the eighteenth century mention is made in the municipal archives of subventions to enable poor persons to go and bathe in the sea after they had been bitten. The surprise bath was applied either by throwing the patient into the sea or by giving him shower baths of the most primitive kind. Van Helmont once saw an old man dripping with water and fastened to the mast of a ship. He asked what crime he had committed, and was told that he was a hydrophobic patient who was being thrown into the sea from time to time. In Italy Morgagni prescribed three successive immersions. Boerhaave thought sea water had a specific action and neutralized the poison. According to him salt was the active ingredient. Acting on this idea, some doctors applied herrings to the wound.

According to Desault the following was the method adopted in the South of France in the eighteenth century. The patient, with nothing on but a shirt, was placed on his knees at the edge of the sea. When a wave came two strong men ducked his head, so that the wave went all over him. This was repeated up to nine times. He was then wiped dry and clothed. Then he was believed to be safe. In 1775 Sabatier, whose name is well known in medicine, took to Dieppe a non-commissioned officer and a soldier of the Invalides who had been bitten by a rabid animal. When they arrived there the mistress of the inn told him that immersion in the sea was very frequent, and that many patients came for the purpose. The treatment was then a monopoly of six persons, who obtained the privilege from the municipality. Some of these were accordingly summoned, and the patient was made to go into the sea entirely naked, being held firmly by the elbows and under the armpits. The bathers walked face outwards, the patient going backwards. When a wave came in the bathers suddenly threw their victim backwards, repeating this manœuvre five or six times.

The reputation of the treatment declined rapidly in the last years of the eighteenth century and in the nineteenth it was almost an extinct tradition, though, as late as 1864, there was at least one French doctor who believed in it. It is to be noted that many of those who claim cures by this method forget to mention that before having recourse to it they had at once cauterized the wound. This was done very often. Again, it has to be remembered that many of the dogs were unjustly accused. There was then no means of establishing that they were rabid. In genuine cases of hydrophobia the sea-water cure was useless; when people were the victims of a false alarm, suggestion had the largest share in the cure. In the seventeenth century, when it was most fashionable, there were notorious cases of failure, many people having died of the disease after they came back from the seaside.

THE NUTRITIONAL IMPORTANCE OF THE PRESENCE IN DIETARIES OF MINUTE AMOUNTS OF CERTAIN ACCESSORY SUBSTANCES.

THE importance of minute amounts of substances as accessory factors in dietaries has recently received a good deal of attention. The most notable example of the effect of such substances is afforded by the numerous investigations into the causation of beri-beri. Other examples are afforded by the discoveries concerning the conditions that induce scurvy, and concerning the inability of certain dietaries to promote the growth of young animals, although they can maintain adults in weight and health. It is the more important results of the investigations of these three problems that will be briefly considered in this review.

Beri-beri is prevalent in rice-eating communities, and the conclusion that the disease resulted from the continuous consumption of a diet consisting too largely of polished rice was first reached by Eykman (1897), and afterwards by Braddon as the result of epidemiological investigations extending over ten years. Braddon's work brought out the further important point that natives consuming rice which had been parboiled before the removal of the pericarp did not contract the disease. As the result of the substitution of parboiled for polished rice based on his recommendations, the case mortality of beri-beri in the hospitals of the Malay States was greatly diminished.

Various theories have been held in regard to the causation of beri-beri. The epidemiology of the disease strongly simulates that of an infective malady, and numerous micro-organisms have been held responsible for it. Beri-beri has also been regarded as arising from the presence in the rice of a poison, formed either by a fungus, as in the case of ergotism, or by some fermentation change during storage. The disease has also been ascribed to a deficiency of proteins in the diet.

An important step in the investigation of beri-beri was the discovery by Eykman (1897) that birds, when fed on polished rice, developed an analogous disease with extensive polyneuritis, and that this disease was not induced by diets of unpolished rice. Eykman also showed (1906) that the aqueous extract of rice polishings cured polyneuritis and that the active constituent was dialysable and soluble in alcohol. These observations have been confirmed by many other workers (Schaumann, 1908–11; Fraser and Stanton, 1910–11; Terruchi, 1910; Chamberlain and Vedder, 1911).

Grijns (1901, 1909) showed that foodstuffs other than unpolished rice could prevent polyneuritis, but he found that their protective properties were destroyed by heating to 120° C. He put forward the view that beri-beri results from a deficiency in polished rice of a substance necessary for the metabolism of the nervous system. This view has been borne out by the results of subsequent investigations.

Fraser and Stanton (1911) ascertained that polished rice contained less phosphorus than unpolished rice, and that the content of phosphorus was a useful indication as to whether the rice was an adequate diet or not. These results supported Schaumann's theory (1908) that beri-beri was caused through a deficiency in the dietaries of organic phosphorus compounds. He found (1910), however, that many phosphorus-containing substances were ineffective in preventing and curing polyneuritis; and Chamberlain and Vedder (1911) subsequently showed that a curative extract of rice polishings contained only a minute proportion of the total content of phosphorus in the original polishings. Schaumann (1911) therefore modified his theory and suggested that the curative substance was an activator in metabolism, favouring the assimilation of certain nutrients, probably phosphorus compounds.

Braddon, and later Cooper and Funk (1911), found that exclusive diets of various pure carbohydrates induced polyneuritis in birds, thus disproving any intoxication hypothesis concerning the causation of beri-beri; and Cooper and Funk also showed that the curative substance was entirely precipitated by phosphotungstic acid from an aqueous solution of an alcoholic extract of rice polishings. The active fraction contained no phosphorus, protein, or carbohydrate.

Funk (1911–12) by a complex fractionation of the phosphotungstic precipitate, involving the use of the salts of heavy metals, succeeded in isolating a small amount of a substance melting at 233° C. Of this 0.02 to 0.04 gram cured neuritic pigeons. He ascribed to it the provisional formula $C_{17}H_{20}N_2O_7$. Subsequently he isolated curative substances melting at a similar temperature from ox brain, yeast, and milk. The active substance was precipitated by silver nitrate and mercuric acetate, but not by mercuric sulphate or nitrate; its aqueous solution was of neutral reaction, and did not react with acids. These properties suggested to Funk that the substance was probably a pyrimidine base, analogous to thymine and uracyl and a constituent of nucleic acid. He has in a recent paper (1911) shown furthermore that certain purin and pyrimidine substances exert a marked action on pigeons affected with polyneuritis, in some cases prolonging the lives of the birds, but in others actually ameliorating the symptoms. Cooper (1913) also found that strychnine prolonged the lives of neuritic pigeons.

B. Moore and his collaborators (1912) have also obtained from yeast a curative substance to which they ascribed the formula $C_7H_{17}N_2O_5$, and Suzuki, Shimamura, and Odaki (1912) have prepared an active substance containing nitrogen from rice-polishings by forming its picrate, but they have not published results of its analysis.

The difficulty encountered by all these workers is that the active substance seems to be largely destroyed during the chemical manipulations, so that it has not yet been possible to prepare sufficient to study its chemical constitution and properties. For some time the prevention of beri-beri must therefore depend upon the addition to the polished rice of foodstuffs known to contain the antineuritic substance, and accordingly Cooper (1913) has investigated the distribution of this substance amongst various foodstuffs by a series of dietetic experiments upon birds. The results indicated that while voluntary muscle was deficient in the antineuritic substance, heart muscle, egg yolk, lentils, and barley were very effective in preventing polyneuritis; of these lentils and barley will probably be the most suitable substances with which to supplement the polished rice diet.

It was also shown by Cooper that the loss in body weight resulting from the polished rice diet was not necessarily prevented by the addition of an amount of a foodstuff sufficient to prevent polyneuritis, and that brain was very effective in maintaining body weight, but was of relatively small antineuritic value. These results indicated that in polished rice there exists a secondary deficiency of substances essential for the maintenance of body weight, as was believed by Schaumann (1911).

The conclusion to be drawn from the numerous investigations is that beri-beri is caused by the deficiency in polished rice of a nitrogenous substance, small amounts of which are essential in the metabolism of the nervous system. The substance appears to be a pyrimidine base, but its exact nature is not yet discovered. Little is known concerning the part this substance plays in metabolism. It would appear not to be firmly combined with the lipoids of the nervous system, because it can be almost entirely removed from lipoids by simple treatment with acetone (Maclean, 1912) or water (Cooper, 1913). As has been already stated, Schaumann considers that the antineuritic substance behaves as an activator or catalyst in metabolism, thereby rendering possible the assimilation of certain nutrients, probably phosphorus compounds. The rapid curative action of the substance in small amount certainly suggests that by some stimulating effect it can quickly readjust the nutrition of the nerve cells to its normal state, but there is no evidence at present that it is especially related to phosphorus metabolism.

Ship beri-beri sometimes develops amongst crews of sailing ships during long voyages, and symptomatically somewhat resembles tropical beri-beri. The disease was rare on Norwegian ships before 1894, but since this date has been of frequent occurrence. Till 1894 the diet of the crews consisted of salt meat, peas, and biscuits made with rye flour, but subsequently, with the idea of improving the conditions of the sailors, shipowners were required by law to provide bread made from wheat flour, and at the same time the rations of salt meat and peas were reduced

and supplemented with tinned meat and fish which had been heated above 100° C. during preparation.

Holst (1907) found that birds fed on rye bread or peas remained healthy, but developed polyneuritis when fed on wheat bread, or on salt meat boiled for an hour at 100° C. Grijns (1901) had previously found that polyneuritis resulted from diets consisting of meat which had been heated above 100° C. These experimental results strongly suggested that ship beri-beri became prevalent in consequence of the replacement in the dietaries of white flour bread for rye bread and the reduction of the ration of peas, and not apparently in consequence of the substitution of tinned for salted meats.

During the last few years scurvy—another disease occasioned by the continuous consumption of diets which, although adequate as regards proteins, carbohydrates, and fats, are deficient in some unknown constituent minute quantities of which are essential—has been investigated principally by Holst and Fröhlich, Fürst, and Funk. Scurvy is particularly liable to result from diets of cereals and preserved foodstuffs, especially if they have been sterilized by heat. The disease can be prevented and cured by the addition of an adequate amount of lime juice, fresh vegetables and fruits to the diet, but, as has been pointed out by Jackson and Harley (1900), it has sometimes occurred in expeditions, notwithstanding the inclusion of these foodstuffs in the diets. Possibly the rations consumed were insufficient to supply the necessary amount of antiscorbutic substance.

Just as the investigation of beri-beri was facilitated by the experimental production in birds of a polyneuritis (Eykman), similarly our knowledge of the nature of scurvy has been greatly advanced by the discoveries of Holst and Fröhlich (1907–12) and Fürst (1909–12) that symptoms resembling those of scurvy could be induced in guinea-pigs and rabbits by exclusive diets of barley, oats, rice, and bread, and prevented by the addition to these diets of sufficient amounts of various antiscorbutic foodstuffs such as green vegetables, fruit, etc,

Fürst (1909) also made the interesting observations that yeast, which was very effective in preventing beri-beri, possessed no protective properties against scurvy, and that whereas grain was lacking in the essential principle, it developed an antiscorbutic substance during germination. He suggested that this substance is produced in the plant by the agency of enzymes.

No information has yet been obtained in regard to the nature of the active substance. It appears to be even more labile than the antineuritic substance, and the methods of fractionation adopted for the separation of the latter which involve the use of heat and alkali appear to be even more unsuitable for the isolation of the antiscorbutic agent. Holst and Fröhlich (1911, 1912), however, have found that the substance is soluble in acid, insoluble in petrol-ether, and dialysable; and Funk (1913; 2) has found that milk retains its antiscorbutic properties after the elimination of the proteins, and that the active constituent is carried out of solution by kaolin, but not by dialysed iron.

The fact that foodstuffs effective in preventing beri-beri are not necessarily antiscorbutic indicates that beri-beri and scurvy are caused by the deficiency of different substances in the diets. It was shown, however, by Holst (1911) that although a diet of polished rice induced polyneuritis in birds, it gave rise to both scorbutic and neuritic symptoms in pigs, and to scorbutic symptoms only in guinea-pigs. It has been concluded from these observations that a very close relationship exists between beri-beri and scurvy. The facts do not, however, necessitate this conclusion, and it is possible that the antineuritic and antiscorbutic substances participate in distinct metabolic processes, and that the relative amounts of the two agents required for the maintenance of health are not identical for different animals. If this be the case, then in animals placed on diets deficient in both the antiscorbutic and antineuritic substances the relative rate of utilization of the active substances stored in the tissues will be specific for each animal, and scorbutic or neuritic symptoms will therefore appear according as to which protective substance is consumed first. On the other hand, if the rates of consumption of the two substances are nearly identical, neuritic and scorbutic symptoms will develop simultaneously.

The conclusion, then, to which we are brought is that scurvy results from the deficiency in the diets of a specific accessory substance, and in this resembles beri-beri, but as yet no information has been obtained in regard to the nature of the antiscorbutic agent.

Infantile scurvy has been ascribed on clinical evidence by several investigators since Barlow (by Meyer in 1901, Neumann in 1902, Heubner in 1903, and Brachi and Carr in 1911) to the consumption of diets consisting of boiled milk with or without carbohydrate foodstuffs. The disease can be cured by raw milk, lime juice and grape juice. It resembles scurvy symptomatically and in being apparently caused by the deficiency in the diet of some necessary substance.

Fröhlich (1909, 1912) has shown that pasteurized milk (that is, milk heated to 70° C.) prevented the development of scorbutic symptoms in guinea-pigs fed on oats, while milk heated at 98° C. for ten minutes did not obviate the development of scurvy, because it may be assumed it did not contain enough of the essential substance. Exclusive diets of either raw or boiled milk, however, did not induce scurvy. This suggests that in boiled milk there is a sufficient amount of the antiscorbutic agent to supply the needs of the guinea-pig's organism when milk is the sole food, but when cereals are added to the diet, owing either to the increased requirements of the organism or to a reduction in the ration of milk, the supply of active substance is inadequate. Somewhat analogous results have been obtained by Cooper (1913), who found that birds fed on large rations of polished rice developed polyneuritis in a shorter time than underfed birds, the supply of the antineuritic substance stored in the tissues thus appearing to be more rapidly utilized in the former than in the latter. These facts are of fundamental importance to dietetics, and a further investigation of the question will be of value.

The clinical evidence obtained by Dr. Janet Lane-Claypon (1912–13) indicates that raising milk to the temperature of boiling water has no deleterious effect upon its nutritive value. It would appear that the amount of antiscorbutic substance normally present in an average sample of milk is such that, although some is destroyed by heating to the above extent, there is still sufficient left to supply the needs of the infant's organism. The fact that infantile scurvy does occasionally result from diets of boiled milk may be due to the particular milk being poor in the active substance, or to the requirements of the children being greater than usual, or possibly, as suggested by Fröhlich's researches, to the addition of starchy foodstuffs to the diet.

The particular importance of small amounts of substances of unknown composition in the metabolism of growing animals appears from the interesting researches of Osborne and Mendel (1911) and Hopkins (1912). These investigators have shown that when dietaries consisting of the requisite proteins, fats, carbohydrates, and salts capable of maintaining adult rats in weight and health were administered to young animals, although they might keep them healthy, they totally failed to promote their growth. When, however, very small amounts of milk from which the proteins had been eliminated were added to the diet, growth proceeded normally. The nature of the substances present in the protein-free milk so essential for growth is unknown.

Of the three substances respectively necessary for the prevention of beri-beri and of scurvy and the promotion of growth, we at present possess some knowledge of only one—namely, the antineuritic agent. These substances exist only in small amount in food materials, but they are so extremely active that minute quantities are sufficient to supply the needs of the organism. The presence of the substances in such low concentration, however, is the great obstacle to their isolation on a large scale, and this is accentuated by the considerable loss in active material incurred during the necessary chemical manipulations. Thus 0.001 gram a day of the anti-beri-beri substance seems adequate for the pigeon's organism, and this is contained in about 5 grams of barley (the daily amount required to prevent polyneuritis in pigeons fed on polished rice), so that to obtain a sufficient amount of the active substance for chemical and physiological experiments a large quantity of material must be utilized. A considerable amount of work must therefore be

carried out before these substances can be isolated and their chemical composition determined. Such discoveries, however, will be of great importance not only as a contribution to our knowledge of metabolism, but also on account of their practical value in the prevention of the respective types of malnutrition resulting from the deficiencies of the substances in diets.

The nutrition of an animal is thus seen to depend not only upon the supply of proteins, carbohydrates, fats, and inorganic material, but also upon the presence in the diet of certain accessory substances, small amounts of which are sufficient to supply the needs of the organism. As the active substances are distributed most irregularly amongst foodstuffs (this is true at any rate in the case of the anti-neuritic and antiscorbutic agents), the nutritive value of food material cannot be accurately expressed in terms of its composition and potential energy, unless the content of the accessory substances is taken into consideration. The experience of agriculturists that expectations based on the results of chemical analysis as to the nutritive and fattening values of food materials are frequently not justified in practice may find an explanation in facts of the order of those detailed in this article.

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THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

HAVING been reappointed this session, the Parliamentary Committee which is inquiring into the sale and advertisement of proprietary medicines resumed its sittings at the House of Commons on March 27th. Sir Henry Norman again presided.

THE ANALYSES IN "SECRET REMEDIES."

Evidence was given by Mr. Arthur E. Barclay, of Messrs. Barclay and Son, Limited, wholesale chemists, London. The witness endorsed the views expressed to the Committee on behalf of the Proprietary Articles Section of the London Chamber of Commerce. He mentioned that of the 235 preparations referred to in *Secret Remedies* and *More Secret Remedies*, his firm only knew of 120, about 113 being entirely unknown to them. The preparation known as "Mrs. Johnson's American Soothing Syrup" was the only article manufactured by his firm mentioned in the volumes. The analysis given stated that the preparation contained a considerable proportion of free hydrochloric acid, but, as a matter of fact, no hydrochloric acid was introduced in manufacture. Such a large proportion as the analysis mentioned could not be introduced accidentally, because it would amount to 1¼ gallons of the quantity of 50 gallons made at one time. The analysis also omitted two important ingredients; the names of these the witness supplied to the Committee privately. The witness expressed himself in favour of the registration of proprietary articles in order that the manufacturers might be more easily identified. He said that Mrs. Johnson, whose name is associated with the soothing syrup manufactured by his firm, was a real person; the rights in the medicine were purchased in 1831 for £1,950.

Mr. Glyn Jones called the attention of the witness to an editorial in the BRITISH MEDICAL JOURNAL of March 23rd, 1912, alluding to the soothing syrup as a preparation consisting of hydrochloric acid, common salt, saffron, and honey, to be rubbed on the gums.

The witness said that possibly owing to the difficulty of analysis in this particular case, the citric acid, which the preparation did contain, had been wrongly described as hydrochloric acid.

Mr. Glyn Jones: When your firm saw this misdescription, as you say, in the BRITISH MEDICAL JOURNAL, why did you not take some action?

The Witness: One reason was that we thought if an action was brought we should have to disclose the formula, which we did not wish to do. In reply to a further question, the witness said that 160 pages of a catalogue issued by his firm were devoted to proprietary articles. There were 80 on a page, so that the number of articles referred to would be about 12,000. He did not think it was possible for a profitable business to be done in a proprietary medicine which had no real merit.

Mr. Glyn Jones: Is it your experience that articles obviously of a fraudulent character have to be put on the market at a comparatively high price?—Yes.

And the business is done by direct sale to the public?—The greater part of it is done by direct sale and by canvassing from place to place.

And they have to catch a fresh dupe every time?—Yes; they cannot rely on repeat orders. The witness added, in reply to another question, that his firm constantly received requests to place new proprietary preparations on the market, but he did not recollect ever having received such a request from a medical man. They came principally from members of the public.

Mr. Glyn Jones: How do the retail trade generally regard the business in proprietary medicines—favourably or not?—They regard it favourably, as one they can make a profit out of, but the competition is so great and the prices have been cut so much that a great many articles are sold without any profit at all.

The Chairman called the attention of the witness to the differences in the wording which appeared on the labels of the soothing syrup as sold in this country and Australia. He asked if the following statement did not suggest a Government guarantee of the preparation: "Mrs. Johnson having sold this preparation to them, Messrs. Barclay and Co. beg to refer purchasers to the Government stamp with their name thereon as a security to the public."

The witness said he did not read the phrase in the sense suggested by the Chairman. The reference was to the name of the firm, and not to the Government stamp.

The Chairman: Can you suggest that any ignorant person would not regard it as meaning that the Government stamp constituted a certain security, and was not this form of words devised to give that impression?

The Witness: I believe that form has been used ever since we sold the medicine.

The Chairman: If there is any offence in the form of words—I am not saying there is—the fact of using them for so many years would only make the offence greater. I notice that although the law permits that to be stated to the British public, the Australian law causes the statement to read: "Mrs. Johnson having disposed of the recipe to Messrs. Barclay and Co., they guarantee that the syrup is made of pure ingredients and beg to refer the public to their signature, without which the contents of the packet cannot be genuine."

The witness remarked that in Australia a Government stamp was not required, so that the wording could not be the same. He considered the effect of the two statements was practically identical.

The Chairman also called attention to variations in Australia and this country in the directions accompanying the packet. The British public were informed, "As soon

as the syrup is rubbed on the gums the child will recover, being as innocent as it is efficacious." The Australian authorities seemed to be a little more particular as to the grammar, for on the Australian labels the statement was merely, "The syrup is rubbed on the gums." Another statement made to the British public was that "by opening the pores at that early age no child will have fits." That statement was omitted from Australian labels. The witness admitted that this was a rather sweeping statement, but the firm adhered as much as possible to the old style of label used when they bought the remedy.

"WINCARNIS."

Mr. W. Rudderham, general manager of Messrs. Coleman and Co., Limited, proprietors of Wincarnis, was the next witness. He dealt with the evidence given before the Committee by Dr. Mary Sturge, with reference to medicated wines. He denied that any one could take the preparation without knowing it was a wine. The ingredients were stated on the bottle, and consisted of a high-class foreign wine, meat extract, and extract of malt. The quantity instructed to be taken would not have any intoxicating effects. Before intoxication could result a very unpleasant and nauseating feeling would be produced by the meat and malt extracts contained in the wine; these were calculated to prevent any misuse of the preparation. The witness said there was a substantial difficulty, in making a satisfactory mixture out of the ingredients he had mentioned, to secure a preparation which would be stable and clear in appearance. The method of doing this was an important trade secret, which it would be injurious to the company to be compelled to disclose. Wincarnis was not advertised as a cure for any specific disease, but as a restorative, and as being beneficial for various ailments. He could prove that the preparation had been recommended by 10,000 medical men. Since 1909 the company had received 4,700 testimonials and recommendations from doctors to send bottles to patients. Documents of this kind prior to that date were destroyed in the flood which overtook Norwich last August. The only adverse criticism of the preparation had come from extreme total abstainers.

ONE HUNDRED YEARS AGO.

AN ENCYCLOPAEDIA OF MEDICINE IN 1813.

IN April, 1813, the subscribers to the *Dictionaire des sciences médicales* were reading or glancing over the contents of the fourth volume of that great work. The first volume had appeared in 1812, and the last (the sixtieth) did not come until 1822, so that for ten years at intervals of about two months the individual parts were being published in Paris and were making their way all over Europe. The publisher was C. L. F. Panckoucke, and how widely the work was being distributed may be learnt from the list of booksellers given on the page facing the title in each volume. Not only were there firms in Paris and in all the leading towns of France from whom the *Dictionaire* could be obtained, but also in various other countries there were booksellers ready to supply it. Thus there were agencies in Aix-la-Chapelle, Alexandria, Amsterdam, Brussels, Colmar, Florence, Ghent, Geneva, Hamburg, London, Leipzig, Lausanne, Madrid, Maestricht, Mannheim, Milan, Naples, Turin, Warsaw, and Venice; whilst the fact that in Moscow there was a bookshop from which the work could be got must not pass unnoted.

It was a gigantic undertaking. But France had been astonishing the world by several vast enterprises. To the amazement of Europe the troops of the Republic had withstood and got the better of the seasoned armies of Austria and Prussia. In 1812 fighting was still going on in many places; the French forces in the Peninsula were strong enough to hold Wellington at bay, and yet Napoleon was able to lead an army of nearly half a million men into Russia; there seemed to be nothing too great or too hard for the soldiers of either the Republic or the Empire to accomplish. Even the disastrous retreat from Moscow was a gigantic event; Bonaparte had nothing that was mediocre in his affairs; his victories were magnificent and his failures were stupendous.

Now whilst the troops of France were pouring in disorder and defeat across the frozen plains of Russia French medical men were launching an undertaking which, in its way, was also huge and impressive. They were beginning to invade Europe with their *Dictionaire des sciences médicales*. When the army of Napoleon was in retreat from Moscow the first volumes of the *Dictionaire* were being issued from the press in Paris, and, astonishing to relate, Messrs. Ricce and Saucet, the booksellers, were apparently receiving orders for the work near by the charred walls of the Kremlin. This medico-literary invasion had a happier result than any of the military achievements of the Emperor, and under the orders of "*une société de médecins et de chirurgiens*" the *Dictionaire* was destined to carry the evidence of the greatness of French medicine to the most remote corners of Europe. It is also no small honour to their country that the doctors made no retreat during all these tempestuous times, but continued to send forth, even during the Hundred Days before Waterloo, the bimestrial volumes of their *Dictionaire*.

They are not small books, these bi-monthly volumes. The one which was being read in April, 1813, contained 572 pages, and carried the alphabetical rubrics from *Can* to *Cha*; it was the fourth, and there were to be fifty-six more of that size before "Fin" could be printed. Neither were the writers small men, although there may be some justification for the criticism offered by the *Journal de bibliographie médicale* for April, 1813, that they were all of one school. Seventy-five names appear on the title-page, and amongst them are to be found Alibert, Bayle, Breschet, Cadet de Gassicourt, Chaussier, Cloquet, Coste, Cuvier, Dubois, Fournier, Gall, Geoffroy, Kergaradec, Laënnec, Larrey, Pelletan, Pinel, Royer-Collard, Spurzheim, and Tollard—all of them men who had made or were making a reputation.

Our English word "dictionary" does not at all convey the idea worked out in this set of sixty volumes. "Encyclopaedia" comes nearer to it, "encyclopaedia and dictionary" nearest of all, perhaps. There are long articles, such as one meets with in modern encyclopaedias; but between these there are also short ones, which may be, and in many cases are, hardly more than definitions. There are illustrations, but they are not numerous: there are two in the fourth volume, there is one in the third, and four each in the first and second volumes. It need hardly be said that in the early part of the nineteenth century illustrations were much more expensive than now, and, for the time, one may call the work well supplied. The articles are all signed, and some of them are provided with good bibliographies.

Some idea may be gained of the matters dealt with in this work from a simple enumeration of the headings in the first fifty pages of the fourth volume. The first article is on *canelle* (cinnamon), with a short separate note on *canelle blanche*. Then follows a paragraph on *canepin* (lambskin), and an interesting note on *canicule et jours caniculaires* (Sirius and the dog days) in which Hippocrates and Aristotle are quoted. *Canin* (canine) is referred to in its various medical combinations, such as *faim canin* (canine hunger), "une faim tres-considerable et que rien ne peut apaiser"; *dents canines* (canine teeth); *fosse canine* (canine fossa), and *muscle canin* (commonly called "risorius muscle" by the anatomists of to-day). Then comes an article on *canitie* (canities or greyness) with curious observations of exceptional cases and some recommendations for the prevention of this sign of old age, for, says the writer, "although grey hair is no disgrace, and though a white head inspires respect, there are women and even men vain enough insistently to demand that grey hairs shall be caused to disappear," human nature being the same always. The headings *canne aromatique* and *canne à sucre* are mere cross references, but the article on cantharides covers twelve pages, and is provided with a long list of books and papers which have been written on that coleopteral product; "one could make a book out of the titles alone of the writings which have dealt with cantharides and their preparations," is the comment of Chaumeton, who is responsible for this article. Then there are papers on *canthus*, on *canule* (a canula), on *caout-chouc* (vulgairement gomme élastique), on *capeline* (a sort of bandage), on *capillaire* (in its botanical, physical, and anatomical

meanings), on *capillament* (the hair of the head and of other parts of the body), on *capillation* (a slight fracture of the cranium), on *capistration* (with its cross reference to phimosis), on *capistre* (a sort of trismus), on *capitale* (a sternutatory powder), on *capituluve* (a head bath), on *capreolaire* (an old descriptive term applied to the spermatic vessels), on *caprier* (the caper tree), on *caprisant* (uneven, as applied to the pulse), on *capsulaire* and *capsule* (with their anatomical, botanical, and chemical significations), on *capucine* (the *Tropoeolum majus*, one of the Geraniaceae), on *caput mortuum* (the residue after destillation), and on *carabe* (one of the coleoptera). Articles on *caractère*, *caractéristique*, *caramel* ("c'est le nom qu'on donne au sucre qui a été soumis à l'action du feu"), and *carbonate* bring to an end the list of subjects dealt with in the first fifty pages of this volume.

Perhaps the most interesting, and certainly the most entertaining, article of this instalment of the *Dictionaire* is that of more than 120 pages on *cas rares* by Fournier. It is a sort of scrapbook of all kinds of wonderful things—monstrosities, deformities, minor malformations, abstinence from food, catalepsy, slow pulse, spontaneous combustion, anomalies of conception, constipation, third dentition, rumination, voluntary vomiting, sweating blood, haemophilia, longevity, ventriloquism, etc.; and at the end the author writes: "The article will seem very long to persons who do no more than count its pages; those who will read it through will be of opinion that it falls far short of saying all that might be said on a subject so interesting as that of rare cases." We do not believe the readers of 1813 found it too long; those of 1913 may easily spend an interested half-hour in its perusal and not grudge the time.

Such was the *Dictionaire* which Panckoucke was publishing in the second decade of the nineteenth century. It was not, of course, the first encyclopaedia to appear; there had been Chambers's *Cyclopaedia* in 1728, Diderot's *Encyclopédie* in twenty-eight volumes (1751–72), and the first edition of the *Encyclopaedia Britannica*, which was published in Edinburgh between 1768 and 1771; but it was the first medical encyclopaedia of considerable dimensions. *A Diccionario de medicina y cirugia*, in seven volumes, had been published at Madrid in 1805–7, but this was a small thing compared with the sixty volumes of Panckoucke's venture. It was soon followed by many others, and there has hardly been a pause since in the succession of encyclopaedias which have poured from the press of France, Germany, and our own land. There was the *Dictionnaire abrégé des sciences médicales* in fifteen volumes (1821–6), the *Encyclopädisches Wörterbuch der medicinischen Wissenschaften* in thirty-seven volumes (1828–49), the *Dictionnaire de médecine et de chirurgie pratiques* in fifteen volumes (1829–36), the *Dictionnaire de médecine ou répertoire général des sciences médicales* in thirty volumes (1832–45), Forbes's *Cyclopedia of Practical Medicine* in four volumes (1833), the *Encyclopédie des sciences médicales* in forty-one volumes (1834–46), Copland's *Dictionary of Practical Medicine* in three volumes (1834–59), the *Dictionnaire des dictionnaires de médecin française et étrangers* in eight volumes (1840–50), the *Encyklopädie der gesammten Medecin* in ten volumes (1841–5), the *Nouveau dictionnaire* in forty volumes (1864–86), and the huge *Dictionnaire encyclopédique des sciences médicales* in eighty-one volumes (1869–86), not to name many of more recent date, and not to refer at all to those which were truly dictionaries rather than encyclopaedias. Perhaps, however, a sentence should be found for the *Medicinal Dictionary* of Dr. Robert James, published in three volumes in 1743 and translated into French by Diderot and others in 1746; this was Samuel Johnson's Dr. James, also the Dr. James of James's powder. Boswell states that Dr. Johnson wrote parts of the dictionary himself, but what parts he leaves to medical men to discover.

THE personal estate of the late Dr. Peter Redfern, formerly Regius Professor of Anatomy and Physiology at Queen's College, Belfast, has been sworn at £96,279.

THE sixth Pan-American Medical Congress will be held in Lima, Peru, in August (3rd to 10th). In connexion with the congress there will be an international exposition of hygiene, which will be opened on November 2nd and closed on December 31st.

TRADE UNIONISM AND MEDICINE.

AT the Annual Representative Meeting at Liverpool last year an interesting discussion took place on the advantages which might accrue from the establishment of a medical union registered under the Trade Union Acts, and on the part which it might be possible and desirable for the British Medical Association to take in any such scheme. During that discussion the Solicitor made a statement as to the legal position of the Association and as to the legal difficulties which would attend action by it in this direction. He made it clear that the difficulties in the way of converting the British Medical Association into a body which came within the definition of a union capable of registration under the Trade Union Acts were very considerable, and the Representative Meeting adjourned the discussion to the annual meeting at Brighton next July.

Unions Registered or Formed.

Meanwhile a medical union recently formed in Leicester has been recognized under the Trade Union Acts, and is in the enjoyment of such powers and immunities as the Acts confer; and another body called the National Medical Guild has been constituted, and has applied for registration under the Trade Union Acts. The fourteen members of its first council, who will hold office until October, 1914, are, with three exceptions, resident in London.

A brisk discussion on trade unionism and medicine has been occupying a considerable amount of space in our correspondence columns for some weeks, and it has seemed worth while to look carefully at the Trade Union Acts—the most recent only received the Royal assent a few weeks ago—in order to see what exactly are the powers and immunities enjoyed by a body registered under these Acts as compared with those possessed by a body such as the British Medical Association, which is registered under the Companies Acts (as a company not for profit).

Objects of a Trade Union.

The primary object of a trade union is to make the terms of service, including the remuneration of all the persons employed in the calling with which it is concerned, reasonably good, and so to maintain them. This implies either that the existing terms of service are not reasonably good, or that there is a risk of their becoming bad.

An ancillary object of a trade union is to assist its individual members to defend their rights as individuals, and to help them to make better provision by provident methods against the changes and chances of this mortal life. But as some common measure must be used, and as men are to be found to take practically any risk for money, with its promise of future luxury or ease, most disputes in which trade unions have engaged have turned on the question of pay, but not all, as recent railway difficulties may remind us.

The medical profession already has experience enough amply to prove that a medical union must be prepared to deal with both kinds of encroachment, unreasonable or improper demands unduly increasing its labours and responsibilities, and attempts to refuse just pecuniary remuneration. It must have power to defend its members individually, and it must have powers of collective defence. Defence in both cases comprises both the legal right to defend and the pecuniary resources for effective defence, including the compensation of members who suffer by reason of adhering to the union.

There is this difference: that collective defence means collective action, which can only come about through a solid unity which has some efficient sanction in professional sentiment and in common material interests, with, if possible, legal power of enforcement.

Union and Trade Unions.

The fault found with the British Medical Association appears to be that its powers and resources for collective defence and for individual defence and support are inadequate, and that its influence and control over its members are insufficient to ensure effective collective action. Its most loyal members may admit all this—nay, they have been proclaiming it from the housetops—and have striven for years to bring about the changes in its constitution and the extension of its powers needed to effect this reform. But from this to the conclusion

that a Medical Union registrable under the Trade Union Acts should be formed, or the British Medical Association wound up and its assets used for the foundation of such a union, is a long step, and cool-headed members of the profession and of the Association will desire to be quite convinced that the step is not over a precipice into a quagmire.

The syllogism appears to be—"an effective union of the profession is desirable: a union registered under the Trade Union Acts is an effective union: therefore registration of a Medical Union under the Trade Union Acts is desirable." The syllogism would be watertight if the middle term were "a union registered under the Trade Union Acts is the only effective union." Put in either way, the crux is the definition of "effective union." The assumption seems to be that registration under the Trade Union Acts constitutes an effective union, while registration under the Companies Acts does not.

How is a trade union made effective, and what are its powers and immunities as compared with those which are possessed or may be acquired by an association registered under the Companies Act, or, as the British Medical Association has been advised would be the better alternative—a body possessed of a royal charter?

The Acts of Parliament making and amending the law relating to trade unions and trade disputes have to be read with and into one another, which is an obscure and perplexing process.

THE TRADE UNION ACT, 1871.

The Act of 1871, known as "The Trade Union Act," clearly indicates its objects in its opening sections.

> (2) The purposes of any trade union shall not by reason merely that they are in restraint of trade be deemed to be unlawful, so as to render any member of such trade union liable to criminal prosecution for conspiracy or otherwise.
>
> (3) The purposes of any trade union shall not, by reason merely that they are in restraint of trade, be unlawful so as to render void or voidable any agreement or trust.

Ever since the reign of Henry V it had been held that a contract in general restraint of trade was void. A learned judge, speaking of a trade union, said, "It appears to me that without the Act it is clearly an unlawful association; it is an association by which men are not only restrained in trade, but they are bound to do certain acts under a penalty."

Section 4 of this Act disclaims interference, and whilst taking away no jurisdiction it does not confer any. In fact, it leaves matters in this respect just where they were *in statu quo ante* the passing of this Act. This is not always realized, and many people who read about the funds and levies of trade unions believe that a trade union has extra legal powers to raise money from the members.

This section expressly states that there is no legal power. But, of course, the forces of coercion and picketing permitted by the Acts might be used for the purpose of enforcing the levies. The section is as follows:

> (4) Nothing in this Act shall enable any court to entertain any legal proceedings instituted with the object of directly enforcing or recovering damages for the breach of any of the following agreements, namely:
>
> 1. Any agreement between members of a trade union as such, concerning the conditions on which any members for the time being of such trade union shall or shall not sell their goods, transact business, employ or be employed.
>
> 2. Any agreement for the payment by any person of any subscription or penalty to a trade union.
>
> 3. Any agreement for the application of the funds of a trade union—
>
> (*a*) To provide benefits to members; or
>
> (*b*) To furnish contributions to any employer or workman not a member of such trade union, in consideration of such employer or workman acting in conformity with the rules or resolutions of such trade union; or
>
> (*c*) To discharge any fine imposed upon any person by sentence of a court of justice; or
>
> 4. Any agreement made between one trade union and another; or
>
> 5. Any bond to secure the performance of any of the above-mentioned agreements.
>
> But nothing in this section shall be deemed to constitute any of the above-mentioned agreements unlawful.

Therefore, if a member of a trade union refuses to pay his subscription or levies he cannot be sued; if he is willing to sacrifice what he has paid into the union and drop his membership he can do so.

Definition of Trade Union.

In the Trade Union Amendment Act, 1876, we get a definition:

> The term "trade union" means any combination whether temporary or permanent for regulating the relations between workmen and masters, or between workmen and workmen or between masters and masters, or for imposing restrictive conditions on the conduct of any trade or business, whether such combination would or would not, if the principal Act had not been passed, have been deemed to have been an unlawful combination by reason of some one or more of its purposes being in restraint of trade.

The words "any combination . . . for regulating relations . . . or for imposing restrictive conditions on the conduct of any trade or business" led the courts to hold that societies actually proposing to carry on trade cannot be registered as trade unions, and in a leading case the Board of Trade had refused to register a union as the proprietors of a newspaper. A learned judge has held that a union may carry on a newspaper in the interests of the members but not for profit or as a trading venture. In the present state of the law a trade union is in its legal aspects a negative combination for the purpose of imposing restrictive conditions and has no powers to carry on any trade or business of a positive nature.

CONSPIRACY AND PROTECTION OF PROPERTY ACT.

Four years after the passing of the Act of 1871 came the Conspiracy and Protection of Property Act, 1875, a most important section of which enacts:

> **7.** Every person who with a view to compel any other person to abstain from doing, or to do any act which such other person has a legal right to do or abstain from doing, wrongfully and without legal authority:
>
> 1. Uses violence to or intimidates such other person or his wife or children or injures his property; or
>
> 2. Persistently follows such other person about from place to place; or
>
> 3. Hides any tools, clothes, or other property owned or used by such other person, or deprives him of or hinders him in the use thereof; or
>
> 4. Watches or besets the house or other place where such other person resides or works or carries on business, or happens to be, or the approach to such house or place; or
>
> 5. Follows such other person with two or more other persons in a disorderly manner in or through any street or road
>
> shall on conviction thereof . . . be liable to pay a penalty not exceeding twenty pounds or be imprisoned for a term not exceeding three months with or without hard labour.

TRADE DISPUTES ACT, 1906.

The Trade Disputes Act, 1906, is to be read with the Conspiracy and Protection of Property Act. It deals with peaceful picketing as follows:

> **2.** (1) It shall be lawful for one or more persons acting on their own behalf or on behalf of a trade union or of an individual employer or firm in contemplation or furtherance of a trade dispute, to attend at or near a house or place where a person resides, or works, or carries on business or happens to be if they so attend merely for the purpose of peacefully obtaining or communicating information or of peacefully persuading any person to work or to abstain from working.

The Trade Disputes Act was framed to alter the law as laid down in a variety of judgements of recent years. There had been complaints of "judge-made laws."

The Act alters the law of conspiracy, practically abrogating it in the case of unions, actions for tort are limited, and the law of picketing relaxed. Section 1 deals with conspiracy. A paragraph is added as a new paragraph after the first paragraph of Section 3 of the Conspiracy and Protection of Property Act, 1875, which enacted:

> (*Conspiracy and Protection of Property Act.*)
>
> **3.** An agreement or combination by two or more persons to do or procure to be done any act in

contemplation or furtherance of a trade dispute . . . shall not be indictable as a conspiracy if such Act committed by one person would not be punishable as a crime.

Nothing in this section shall exempt from punishment any person guilty of a conspiracy for which a punishment is awarded by any Act of Parliament. . . . A crime for the purposes of this section means an offence punishable on indictment or on summary conviction punishable by imprisonment.

The additional paragraph reads:

(Trade Disputes Act.)

(1) An act done in pursuance of an agreement or combination by one or more persons shall, if done in contemplation or furtherance of a trade dispute, not be actionable unless the act, if done without any such agreement or combination, would be actionable.

The right of action against individuals who conspire survives in this addition, and a plaintiff may proceed against his opponents singly for a tort, or jointly for conspiracy to commit that tort.

But Section 4 of the Trade Disputes Act, 1906, protects unions from the charge by which before the passing of the Act they had often been brought down—that of conspiracy to injure.

4. (1) An action against a trade union, whether of workmen or masters, or against any members or officials thereof, on behalf of themselves and all other members of the trade union in respect of any tortious act alleged to have been committed by or on behalf of the trade union, shall not be entertained by any court.

(2) Nothing in this section shall affect the liability of the trustees of a trade union to be sued in the events provided for by the Trades Union Act, 1871, Section 9, except in respect of any tortious act committed by or on behalf of the union in contemplation or in furtherance of a trade dispute.

A tort may roughly be defined as an injury to a private individual for which the wrongdoer has to compensate the injured party.

Libel is a tort, and the trustees of a trade union cannot be sued for libel or slander published or uttered in contemplation or furtherance of a trade dispute.

Trade Union Act, 1913.

The Trade Union Act, 1913, which became law on March 7th last, empowers a trade union to raise and manage a "Political Fund" for the purpose of promoting the election of a person to Parliament, or to any public office, and of his maintenance after such election. Any member may claim to be exempted from payment to the political fund, and must not on that account be excluded from any benefits of the union (Section 3).

Section 1 of the Act distinguishes between statutory objects and political objects:

1. (1) The fact that a combination has under its constitution objects and powers other than statutory objects within the meaning of the Act shall not prevent the combination being a trade union for the purposes of the Trade Union Acts, 1871 to 1906, so long as the combination is a trade union as defined by this Act, and, subject to the provisions of this Act as to the furtherance of political objects, any such trade union shall have power to apply the funds of the union for any lawful objects or purposes for the time being authorized under its constitution.

(2) For the purposes of this Act the expression "statutory objects" means the objects mentioned in section sixteen of the Trade Union Act Amendment Act, 1876, namely, the regulation of the relations between workmen and masters, or between workmen and workmen, or between masters and masters, or the imposing of restrictive conditions on the conduct of any trade or business, and also the provision of benefits to members.

2. (1) The expression "trade union" for the purpose of the Trade Union Acts, 1871 to 1906, and this Act, means any combination, whether temporary or permanent, the principal objects of which are under its constitution statutory objects: Provided that any combination which is for the time being registered as a trade union shall be deemed to be a trade union as defined by this Act so long as it continues to be so registered.

The right of a member to claim exemption from any contribution to the political fund of the union is defined in Sections 5 and 6.

5. (1) A member of a trade union may at any time give notice, in the form set out in the Schedule to this Act or in a form to the like effect, that he objects to contribute to the political fund of the union, and, on the adoption of a resolution of the union approving the furtherance of political objects as an object of the the union, notice shall be given to the members of the union acquainting them that each member has a right to be exempt from contributing to the political fund of the union, and that a form of exemption notice can be obtained by or on behalf of a member either by application at or by post from the head office or any branch office of the union or the office of the Registrar of Friendly Societies.

Any such notice to members of the union shall be given in accordance with rules of the union approved for the purpose by the Registrar of Friendly Societies, having regard in each case to the existing practice and to the character of the union.

(2) On giving notice in accordance with this Act of his objection to contribute, a member of the union shall be exempt, so long as his notice is not withdrawn, from contributing to the political fund of the union as from the first day of January next after the notice is given, or, in the case of a notice given within one month after the notice given to members under this section on the adoption of a resolution approving the furtherance of political objects, as from the date on which the member's notice is given.

6. Effect may be given to the exemption of members to contribute to the political fund of a union either by a separate levy of contributions to that fund from the members of the union who are not exempt, and in that case the rules shall provide that no moneys of the union other than the amount raised by such separate levy shall be carried to that fund, or by relieving any members who are exempt from the payment of the whole or any part of any periodical contributions required from the members of the union towards the expenses of the union, and in that case the rules shall provide that the relief shall be given as far as possible to all members who are exempt on the occasion of the same periodical payment, and for enabling each member of the union to know, as respects any such periodical contribution, what portion, if any, of the sum payable by him is a contribution to the political fund of the union.

The Leicester Union.

The first "Union of Medical Practitioners" has been registered at Leicester. Its objects are:

To regulate the relations and conduct of medical practitioners as between themselves, and between medical practitioners and their employers.

To regulate the rates of payment and conditions of service of club, friendly society, dispensary, and other forms of contributory contract practice, and the terms and conditions upon which medical service shall be given to persons of limited income.

To impose any other restrictive conditions which may be considered desirable on the conduct, by members of the union, of the trade or business of medical practitioners carried on by them.

In furtherance of these objects the union adopts the following methods and means:

(i) The establishment of a fund or funds.
(ii) The promotion of a system of medical service regulating medical attendance and provision of medicines for persons unable to pay ordinary medical charges (Public Medical Service).
(iii) The promotion of a system or systems of school clinics for the treatment of necessitous children.
(iv) The giving of legal assistance to members in connexion with the above objects.
(v) The promotion of legislation for the protection of the union and for the general and material welfare of its members or the support of or opposition to alterations.
(vi) The advising of members in ethical matters.
(vii) The watching over, protection, and promotion of the interests of members and medical practitioners generally.
(viii) The federation or amalgamation with other bodies having similar objects.
(ix) The establishment of branches, subdivisions or districts.
(x) "Any other lawful method which may be decided to be advisable in the general interests of the members as declared by a majority of two-thirds of those of the members present and voting at a general meeting."

There is an entrance fee of £1 1s., and an annual subscription not to exceed £1 1s.

The Central Committee has the power from time to time to make a levy of a sum not exceeding £5 per member, provided that an interval of not less than three months has elapsed since the laying of a previous levy.

The duties of members are as follows:

Rule 16. Duties of Members.

"(*b*) No member of the Union shall consult with or meet a medical practitioner who carries on any form of contract or contributory contract practice within the sphere of operations of the Union and who does not conform to the working rules for the time being in force regulating the Public Medical Service and the Bye-laws of the Sub-division within which any patient so treated by him resides.

(*c*) No member shall take or treat on contract or contributory contract terms any patient at a lower rate than that prescribed by the working rules for the time being in force regulating the Public Medical Service or any patient who is to his knowledge in receipt of an income exceeding the income limit laid down by such working rules or by the Bye-laws of the Sub-division in which such patient resides.

(*d*) No member shall act for an Insurance Committee, Friendly Society, or combination of lay persons for the provision of medical treatment or medicines which does not conform to the working rules, etc.

(*e*) No member shall canvass or advertise for patients or influence or attempt to influence any persons to do so on his behalf.

(*f*) If any member is found by the Central Committee to be guilty of any act forbidden by paragraphs (*b*), (*c*), (*d*), or (*e*) of this Rule, his conduct shall be deemed to be detrimental to the honour and interests of the Union."

Rule 17.

The effect of this rule is that any member found guilty of conduct detrimental to the honour and interests of the Union as calculated to bring the business trade and profession of a medical practitioner into disrepute shall *ipso facto* cease to be a member of the Union.

The penalty for non-payment of subscription, levy, fine, or other sum payable is expulsion by resolution of the Central Committee.

THE NATIONAL MEDICAL GUILD.

The objects of the National Medical Guild are generally similar to those of the Leicester Union, but the following are in addition set out:

> . . . to employ the funds of the Guild for the political objects defined in Section 3, subsection 2 of the Trade Union Act, 1912. . .
>
> . . . to provide for the insurance of Members, either directly or by arrangement with insurance companies against death, illness, third party liability and (or) damage caused to and by motor cars or other vehicles;
>
> to publish books, papers, and literature in furtherance of the ends of the Guild, . . .
>
> to acquire, lease or build premises for the purposes of the Guild.

These concrete instances of the powers to be obtained by way of registration under the Trade Union Acts may usefully be compared with the powers possessed or sought by the British Medical Association.

THE POSITION OF THE BRITISH MEDICAL ASSOCIATION.

In the draft charter submitted to the Privy Council (as emended by the Representative Meeting of 1909) the Association among other powers sought the following: To publish the BRITISH MEDICAL JOURNAL, or any other journal of a character specially adapted to the needs of the medical profession; to originate, support, promote, and oppose alterations in the law of the United Kingdom or any British colony or dependency affecting the public health or the medical profession, and to promote the candidature of any member of the Association for Parliament or for any British legislative assembly; to take or defend and assist persons in taking or defending legal proceedings, civil or criminal, including proceedings before the General Medical Council in which the honour or interests of the medical profession, or any member of the Association in his professional capacity or any question of professional principle should be involved, and for this purpose to establish, contribute to, organize, and manage a fund, or funds, for the purpose; to provide facilities for the sale or transfer of practices, and for the engagement of assistants or locumtenents; to establish, endow, contribute to, organize, and manage, provident, or benevolent funds, for the benefit of members of the Association; to manage any trusts, directly or indirectly conducive to the interests of the Association or of the profession, or any branch thereof; and to take such other means as might be incidental or conducive to the promotion or carrying on of these objects.

These points may be compared with paragraphs iv, v, vii, and x, of the methods and means of the Leicester Union. With regard to the methods ii and iii of the Leicester Union, the Association has already taken action by way of a central scheme, or schemes, administered locally. Many of the powers sought by the charter are already exercised by the Association. For example, it has always taken a part in the promotion of legislation and the amendment of the law; it has frequently defended or given legal assistance in cases of professional interest, that is, in cases of more than merely personal interest; it regularly takes cases before the General Medical Council; it has recently improved its organization for advising members on ethical matters; and it has set up trusts for purposes ancillary to those of the Association, it has, for example, established a Central Emergency Fund and the Central Insurance Defence Fund. It grew in its early days by amalgamation with other bodies having similar objects, and its organization is based on a system of Branches and Divisions.

The granting of the charter was opposed by certain medical corporations and by certain medical benevolent organizations, but the weight of the opposition undoubtedly lay in the objections advanced by certain branches and members of the Association who objected to certain of the ordinances and by-laws, but expressed their desire that, if the regulations were modified so as to meet these objections, the charter should be granted to the Association, giving it all the powers specified in the draft. The wish of the members, therefore, that the Association should possess the additional powers enumerated above would seem to be practically unanimous.

After the granting of the charter had been refused by the Privy Council, the Association sought to proceed by way of establishing a new association registered with extended powers under the Companies Act, which would take over the work of the British Medical Association as a going concern. It was ascertained that the Board of Trade would sanction the registration of a new company possessing the following powers not definitely included in the present articles of Association, though, as regards (1) and (2), already exercised by it:

> (1) Power to promote and oppose legislation affecting the public health or the profession.
>
> (2) Power to take part in certain legal proceedings affecting the profession.
>
> (3) Power to establish, endow, and manage benevolent funds (with the restriction that no grant may be made directly to a member of the Association; a member may, if indigent, be benefited indirectly by a grant to his relatives or dependants).
>
> (4) Power to borrow and mortgage.

And that, in addition, certain other matters which had been held to come within the scope of the objects of the existing Association, but are not clearly provided in the existing memorandum, would be clearly defined, namely:

> Power to provide libraries and places for social intercourse.
>
> Power to undertake trusts for the benefit of the profession.
>
> General powers of management of and dealing with property.

The Board of Trade, however, required that the following should be added to the draft memorandum:

> Provided that the Association shall not support with its funds or endeavour to impose on or procure to be observed by its members or others any regulation, restriction, or condition which, if an object of the Association, would make it a trade union.

On looking into the matter further it appeared that the powers which could be obtained in this way were all, with the exception of (*a*) the establishment of a medical benevolent fund, and (*b*) the borrowing of moneys, powers already exercised by the Association, and, in view of the considerable expenditure necessarily attending the transfer of the work and assets of the Association to a new company, the Council resolved to advise the Representative Meeting not at present to proceed further in this way, but to apply to the High Court for an extension of the

memorandum to include only the power of borrowing money on mortgage or otherwise—a power which would result in considerable economy.

Some Deductions and Conclusions.

To the question—What can a trade union do for medical men that a voluntary association cannot do? the answer is, from the legal point of view, not very conclusive.

It would appear that a medical union registered under the Trade Union Acts would have the power to defend its members in the courts. It would also have power to provide for them in sickness, in old age, in unemployment, or in pecuniary distress due to acts done in accordance with the policy of the union. But provision for these matters could be made by a voluntary association out of a trust fund raised for the purpose.

The union would be immune from action for injuries to private individuals if committed in contemplation or in furtherance of a trade dispute. It could also, it would appear, issue a libel in a publication published by it if such publication be issued *in the interests of the members*, but not as a trading adventure.

It would be exempt from the law of conspiracy (except in respect of a conspiracy for which a punishment is awarded by statute) in doing any act in furtherance of a trade dispute if such act committed by one person would not be punishable as a crime.

It would have the power to form a political fund, but not to compel its members to subscribe.

It would have the power to make levies, but would not have power to enforce them at law.

The real power of a trade union would seem to depend:

(1) On its being made to include so large a majority of the persons engaged in the calling that the minority, having regard to the procedure, for example a strike, proposed to be taken is negligible.
(2) On the constancy of its members in abiding by the decision of the majority, properly ascertained according to the regulations of the union.
(3) On the power, in the event of the union failing to come to an amicable arrangement with the employers, to induce its members to strike, that is, to refuse to work.

As to the first point (1), it seems clear *a priori*, and the history of trade unionism fully confirms the conclusion, that the power of a trade union is the same as that of any other voluntary association, such as an association registered under the Companies Acts—neither greater nor less.

As to the second point (2), the advantage which a trade union possesses over an organization such as the British Medical Association as at present constituted, resides in the benefits which it provides for members. A member who leaves his trade union at a pinch forfeits his right to benefits. This is a very real and tangible hold on members which ceases only when the reserve funds of the union have been eaten up by paying compensation to members who are unemployed owing to their loyalty in adhering to the decisions of the union (strike pay). This advantage is reinforced by the power to make a levy, of an amount assessed by the committee, but not exceeding an amount fixed by the rules of the union. Such a levy may be made in anticipation of a trade difficulty, during a strike, when it can, as a rule, only be made on those members who are continuing to work, or after it is over to reinstate the reserve funds of the union.

The power a trade union has in order to induce an individual member to strike (3), over and above a sense of loyalty to his fellows, is, in the first place, the fear of the loss of benefits to which he has become entitled by his contributions, should he, owing to failure to obey the decisions of the union, incur the penalty of expulsion; and, in the second, "peaceful picketing."

Those who have spoken or written in favour of the establishment of a medical union registered under the Trade Union Acts do not contemplate a strike—that is to say, they do not contemplate what manual labour calls the policy of "down tools." They realize, as every one realizes, that the Insurance Act will have the effect of increasing, rather than diminishing, the need for an effective system of professional defence against encroachments by the Government, by friendly societies, and other forms of contract practice, and by individuals, and they believe that while the old system lacked sanction and was obeyed just so long as obedience was consonant with personal taste, trade unionism would afford the desired sanction for rules and would ensure their observance.

We have endeavoured without prejudice to set out the effect of the law with regard to trade unions, and to indicate the powers and immunities which bodies registered under the Trade Union Acts possess, and we have avoided any reference to what may be called sentimental objections, but objections of this order would have to be taken into consideration if one of the propositions advanced above be correct, namely, that the first necessity for a successful trade union is that it shall include so large a majority of the persons engaged in the calling that the minority, having regard to the action proposed to be taken, is negligible.

THE MENTAL DEFICIENCY BILL.

It will be remembered that shortly after the opening of the autumn session last year the Government announced that it could not find time to press the Mental Deficiency Bill (1912) through all its stages. It decided to complete the consideration in Committee of those portions of the bill which had already been dealt with by the Standing Committee at great length and taking these clauses as a foundation to introduce a new measure this year. This decision had the immediate effect of relieving the Committee from the somewhat obstructive tactics of certain members of the Committee who were strongly opposed to certain aspects of the bill. Accordingly the Committee on December 2nd presented to the House of Commons the torso of a measure consisting of seven clauses dealing with (1) central and local authorities and (2) the method of dealing with mentally defective persons. The sacrifice of the bill called forth outcries of disapproval from those interested and pleas that some attenuated measure should be pressed through without delay.

In these columns the view was expressed that on the whole the delay involved in the withdrawal would be amply compensated by the opportunity afforded for redrafting it in view of the fundamental alterations that had been made, the fuller knowledge of the subject which had been gained as a result of the discussions in Committee, and not least in order to have the advantage of the expert assistance of the Commissioners in Lunacy in framing the machinery of such an Act.

The new bill was issued on March 31st, and it is clear, from even a cursory survey of its provisions, that the Government and its advisers have made good use of the time and opportunities thus put at their disposal.

In comparing the bill of 1913 with that of 1912 it must be borne in mind that the latter as amended differed essentially from the bill as originally introduced both in regard to the central authority, the categories of defectives subject to be dealt with, and the definition of defectives in general. In all these respects great improvements were made, and with certain subsidiary changes these improvements are retained in the present draft.

Apart from this, the principal points of importance in the present bill may be summarized under a few main heads.

1. *The General Attitude towards the Problem of the Mentally Deficient.*

In regard to this it may be said in general terms that the note now is more definitely and exclusively the interests and needs of the defective for his own welfare; this note was not wanting in last year's bill, but it was not made so dominating, and it was accompanied by the refrain of the interest of society.

We are fortunate in regard to this problem in that what is desirable in the interest of the individual tends also to be largely in the interest of society also, but it became evident during the debates on this matter last year that what Parliament would readily concede if satisfied that any restraints imposed are in the interest of the individual concerned, it would be less ready to sanction solely in the interest of society. This may not be a very far-seeing attitude, but it is one which has to be reckoned with, and it seems likely that the note struck in the present bill will help to facilitate its passage through the Legislature.

As an illustration of this attitude one may refer to the change in the full title of the bill; it is, To make further and better provision for the care of (instead of as before merely "with respect to") feeble-minded and other mentally defective persons, and to amend the Lunacy Acts. Incidentally attention may be called to these last six words which are new. They are clearly required in view of the amendments made last year, but they may be important as allowing an opportunity for further amendments which could hardly have been incorporated under the bill as previously entitled. Indications of the same spirit may be seen in Subclause 6 (3), where the judicial authority is empowered to make an order "if he thinks it desirable to do so in the interests of such person"; and, again, in the omission from the categories of defectives who may be dealt with under the Act those "in whose case such other circumstances exist as may be specified in any order made by the Secretary of State as being circumstances which make it desirable that they should be subject to be dealt with under this Act," although this appeared in the definition Clause 6 (1) *f* of the amended bill; and, further, the clause forbidding marriage with a defective no longer appears.

As regards "discharge"—a question which directly affects the liberty of the individual—the provisions are now specified in the Act, and not left to the regulations to be subsequently framed. A commissioner will have power to discharge at any time any person detained under this Act without certain exceptions.

A parent or guardian may withdraw a defective who has been placed by him in an institution or under guardianship, at any time on giving notice in writing for the purpose to the Board, unless the Board, after considering what means of care and supervision would be available if he were discharged, determine that the further detention of the defective in the institution or under guardianship is required in the interests of the defective.

It will be seen here once more that the interests of the defective are to be the determining consideration, and that the presumption is to be that he may be discharged by his friends unless it is held to be undesirable in his own interests, and not the other way.

2. *Matters nearly Affecting the Medical Profession.*

The constitution of the Board of Control is left as in the amended bill of last session. There are to be not more than fifteen commissioners, of whom not more than twelve shall be paid. Of the paid commissioners at least four shall be medical commissioners. Hitherto half of the paid commissioners have been medical practitioners; now the proportion may be as low as one-third, and there is no provision, as there well might be, that the paid woman commissioner should be a medical practitioner.

Provision is made to remedy a defect of the former bill and to secure that there must be a medical examination before an order is made under the Act.

The local authorities are not to be required to appoint a special medical officer to assist them in the performance of their powers and duties as in Clause 11 of the 1912 bill.

3. *The Idiots Act and the Institutions Registered under it.*

As promised, the Government, while repealing the Idiots Act, embodies clauses which largely re-enact the provisions of that Act under another form in such a way as to leave the procedure simple, as it was under that Act, and not cause hardship to the voluntary institutions.

This has involved a recasting of the definition clause. The definitions of the various classes of persons who are mentally defective which shall be deemed to be defective within the meaning of this Act are put into a clause by themselves. The addition of the words "who are mentally defective" makes it clear that the bill does not cover all classes of mental defect, and that the bill does not, as it were, purport to create and recognize as defective a condition which is not so recognized apart from the bill. This will deprive such criticisms as those of Sir Frederick Banbury of the slender ground and feeble humour which they may have possessed before.

Then in Clause 2 it is simply stated that a defective may be dealt with by being sent to an institution for defectives or placed under guardianship—

(*a*) At the instance of his parent or guardian, if he is an idiot or imbecile, or is under the age of 21; or

(*b*) If, in addition to being a defective he comes within certain categories which were defined in the amended bill of last year.

No order is required for the idiot or imbecile or for another type of defective when under 21 to be placed in an institution by a parent or guardian, but a single medical certificate as at present.

4. *Voluntary Boarders.*

This was a question to which we have previously called attention, for which no provision was made in the 1912 bill.

The present measure deals with it indirectly by establishing, in addition to State institutions, certified institutions, and certified houses, a new class of home termed "approved homes." These may be either charitable or semi-charitable institutions, or homes run for private profit. Apparently it will be open to such homes to receive defectives of all kinds defined by the Act without certificate, and without powers of detention, but it will not be open to them to receive or detain any person ordered to be sent to an institution by a judicial or other authority. Such persons may be sent to a certified house, and similarly, if powers of detention are required, a parent or guardian may place an idiot or imbecile, or a defective under 21, in a certified house under a medical certificate. It will be seen that this provides for a feeble-minded adult being cared for in an approved home on a voluntary boarder basis. It is doubtful how far this is applicable to idiots and imbeciles.

Under the bill it will be open to any one to undertake the care and control of one person who is defective without the consent of the Board, provided he gives notice to the local authority and the Board within forty-eight hours after the reception of such person. Presumably the Board will then require lunacy certificates in any case in which these seem to be applicable.

5. *Relation to Educational Authorities.*

The duty of ascertaining what children over the age of 5 and under the age of 16 are defective has been left to the local education authority and not to the local authority under this Act, which will have no duties as respects defective children, except as to those whose names and addresses have been notified to them by the Local Education Authority as:

1. Incapable of receiving benefit or further benefit in special schools or classes, or who cannot be instructed in a special school or class without detriment to the interests of the other children;

or

2. Who on or within three months of attaining the age of 16 are discharged from a special school or class and in whose case the Local Education Authority are of opinion that it would be to their benefit that they should be sent to an institution or placed under guardianship.

In the earlier bill power to deal with defective children under the Act was limited to those leaving special schools at 16.

Provision is made that the cases of defective children dealt with under the Act shall be specially reconsidered by the visitors on reaching the age of 21.

The general effect of this is to attempt an early and complete distinction between the cases suitable for treatment by the educational authorities from those more suitable to be dealt with under the Act. The former cases are reconsidered at 16, the latter at 21.

Conclusion.

Speaking generally, the arrangement of the Act is more logical and orderly, and there has been considerable simplification. Less has been consigned to regulations, and there is evidence throughout of the advice of persons accustomed to the working of machinery of this kind and of the many contingencies and special circumstances to be provided for. There is evidence all through of a conciliatory spirit and of an endeavour to meet the many suggestions and claims that must have come up for consideration from different persons or bodies likely to be affected. An illustration of this is the clause designed to meet the religious requirements of the defective. A general survey of the bill leads to the conclusion that the changes as have been made are calculated to meet many of the defects of the earlier bill and likely to disarm serious opposition.

LITERARY NOTES.

In Boswell's *Life of Johnson* we find an instance of a physician who was a strong believer in the influence of the mind on the body. He relates that Johnson and he dined with Dr. Butter, then practising at Derby, with whom Johnson, who was always fond of the society of doctors, had a good deal of medical conversation. Johnson said he had somewhere or other given an account of Dr. Nichols's discourse *De anima medica*. He said:

> Whatever a man's distemper was, Dr. Nichols would not attend him as a physician if his mind was not at ease, for he believed that no medicines would be of any influence. He once attended a man in trade upon whom he found none of the medicines he prescribed had any effect. He asked the man's wife privately whether his affairs were not in a bad way. She said "No." He continued his attendance for some time, still without success. At length the man's wife told him she had discovered that her husband's affairs were in a bad way.

It may be remembered that when Goldsmith was dying Dr. Turton said to him: "Your pulse is in greater disorder than it should be from the degree of fever which you have. Is your mind at ease?" Goldsmith answered, "No, it is not"—surely among the saddest of all recorded last words.

Dr. Benjamin Jowett, the late Master of Balliol, in his will expressed the desire that the proceeds from the sale of his works, the copyright in which he bequeathed to Balliol College, should be used to promote the study of Greek literature, especially by the publication of new translations and editions of Greek authors. The codicil contains the expression of his hope that the translation of Aristotle's works, begun by his own translation of the *Politics*, should be proceeded with as speedily as possible. The College resolved that the funds thus accruing to it should, in memory of his services to the College and to Greek letters, be applied to the subvention of a series of translations of the works of Aristotle. The series is published at the joint expense and risk of the College and the delegates of the University Press, under the superintendence of Mr. J. A. Smith, Fellow of Balliol College, and Mr. W. D. Ross, Fellow of Oriel College. The intention is that the translations shall aim at being such as a scholar might construct in preparation for a critical edition and commentary. The translation of *De Motu* and *De Incessu Animalium*,[1] by Mr. A. S. L. Farquharson, Fellow of University College, has recently been issued. He makes an acknowledgement to Dr. Günther, Fellow of Magdalen College, for valuable criticisms from the naturalist's point of view, adding that it was difficult to resist the temptation to make the notes fuller in this connexion. He defends the genuineness of *De Motu Animalium*, and says that it certainly gives, except in one difficult passage, the exact doctrine of Aristotle, and states that his defence of the genuineness of Chapter X in particular, which deals with the formal and material cause of movement, the physiological changes necessary to it, and the physical characters of "spirit," was favourably received by the Oxford Philological Society. Mr. Farquharson's notes are numerous, but terse and to the point. A good many of them are concerned with textual criticisms, but as has been implied some of them deal with natural history, and in one of them, at least, he has a dig at the author; of the quotation from the *Iliad* in Chapter IV he says that it is "wrongly quoted *more* Aristotle in order and words."

A new edition of Messrs. Funk and Wagnall's great *Standard Encyclopaedic Dictionary* will shortly be issued. The task of revision has been carried out with such thoroughness by three hundred and sixty specialists that the dictionary is practically a new work. The British specialists include Lord Avebury (financial terms), Sir George C. M. Birdwood (Indian), Admiral Sir Cyprian Bridge (naval), Colonel Sir David Bruce (tropical diseases), Sir James Crichton-Browne (medical), Sir Harry Hamilton Johnston (African), Professor J. P. Mahaffy (classical), Sir Hiram Maxim (explosives), Earl Roberts (military), Archdeacon Sinclair (ecclesiastical), Baron Rudolf Carl Slatin Pasha (Sudanese), Sir Richard Solomon (South African), and Sir William Treloar (carpets and rugs). The prospectus states that the work comprises a vocabulary of 450,000 living terms, or 50,000 more than have ever before been defined in any one work of reference. A special feature is the number and excellence of the illustrations. All living animals are drawn to scale, and the 7,000 black and white general illustrations are supplemented by a series of colour plates. Among other useful features is the number of illustrative quotations, selected mostly from the more modern standard English and American authors, and accurately "located," the name of the author, the title of the work, the volume, chapter, page, name of publisher, and date of publication being given. It will be thus easy to trace any quotation to its source. Then there is a department of disputed pronunciation; in every such case the word has been referred to a committee of more than twenty-five leading educators and specialists, and their decision is said to form "a consensus of the best judgement of the entire English-speaking world." This department covers all general or common words regarding the pronunciation of which modern dictionaries differ. Another valuable feature is a list of synonyms in which the nicer distinctions of the meaning of words will be given; this should be useful to writers. The total expenditure on this new edition will amount, it is stated, to £300,000.

M. Lucas-Championnière recently presented to the Académie de Médecine, in the name of the authors, MM. Paul Gaffarel and de Duranty, a book entitled, *La Peste de 1720 à Marseille et en France*. It is a volume of considerable size, with figures and plans giving full details of that famous epidemic. The authors are not doctors, but all available documents are reviewed and minutely studied, not so much from the medical as from the historical, administrative, and picturesque points of view. These points of view, however, are very interesting, especially as in medical works they are often omitted, and without them the history of an epidemic is imperfect. The disturbance in the life of a city and a whole country by a great epidemic and the administrative needs created by the means of protection, of prophylaxis, and reparation, deserve every attention. It is a valuable work of erudition, which is likely to be serviceable. Even at the present day, when we hope that such scourges may not occur, it is useful to know their history, in order that we may take the means of protection that may become necessary.

In the quarterly *Bulletin of the Medical Library Association* (N.S., vol. ii, No. 3, January, 1913) Mr. Charles Perry Fisher, Librarian of the College of Physicians of Philadelphia, gives an account of the changes in medical periodical literature that have taken place since January 1st, 1909. He gives a list of the periodicals relating to the science of medicine that have made their first appearance since that date, of those that have ceased to appear, and of periodicals that have changed their titles during the same period. Great pains have been taken to ensure accuracy, and the list is believed to be fairly complete. The following is a summary according to languages:—*English*—104 new periodicals, 31 that have ceased to appear, and 32 that have changed their titles. *German*—44 new, 15 defunct, and 12 appearing with a changed title. *Italian*—22 new, 3 discontinued, and 4 changed title. *Spanish*—20 new. *Russian*—5 new, and 1 changed title. *Dutch*—5 new. *Swedish*—1 new; and *Czech*—1 new. The great numerical preponderance of periodicals in the English language is accounted for by the number issued in the United States. The following figures, made up principally from the list of current medical periodicals and allied serials issued by the New York Academy of Medicine, may be taken as approximately representing the existing number of medical periodicals: United States, 630; Great Britain and Colonies, 152, making a grand total of 782 periodicals in English; German, 461; French, 268; Italian, 75; Spanish, 29; Dutch, 13; other languages, 26; total, 1,645. Mr. Fisher says justly: "This is a mighty total for one branch of science. Even if we eliminate reports, proceedings, and transactions, which certainly have their proper place under periodical publications, we have a current list of what are technically called 'journals' of about 1,200 titles."

Messrs. W. B. Saunders Company will publish shortly a thoroughly revised edition of Dr. J. W. H. Eyre's *Elements of Bacteriological Technique*. The book has been rearranged and a new chapter dealing with the study of animals experimentally infected has been added.

[1] Oxford: At the Clarendon Press. 2s. net. It is stated that the series will be complete in five volumes, 12s. 6d. net.

British Medical Journal.

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TRADE UNIONISM AND MEDICINE.

IN another part of this issue will be found an article dealing with the legal considerations which arise from the proposal to establish a medical union or unions with objects and regulations rendering registration under the Trade Union Acts possible. The article is a great deal longer than we could have wished, but it seemed necessary to set out the terms of the clauses in the Acts, and an attempt has been made towards its end to state impartially the conclusions which seem inevitably to flow from the premisses.

In the correspondence which has occupied so much space in the columns of the JOURNAL recently, the term "trade union" seems to have been used rather as a counter; its value has not been clearly defined. Yet, in approaching any new subject, the all-important first step is to define the terms used. For the want of this there has been, we venture to think, a disposition to attribute to trade unionism virtues and effects which are conferred upon it not by Acts of Parliament, but by the spirit and the methods which inspire it. Acts of Parliament have been passed to define the powers of trade unions. Each succeeding Act has swept away some previous limitation of common or statute law, but each has sought, perhaps with diminishing conviction, to safeguard the rights of the individual, whether a member of the union or of the general public.

It has been said, half seriously, that in the last resort the final argument of the trade unionist is brickbats. That there is a certain amount of truth in this jeer may be granted; but violence is no necessary part of trade unionism. It is, in fact, contrary to its fundamental principles, which are those of fellowship, and loyalty to each other, among men of the same calling. This may and should be recognized; but it is not a necessary conclusion that the only way for the profession of medicine to attain the same end is by way of registration under the Trade Union Acts. That may, as many now believe, be the right road, but we seem in some danger of mistaking a means for the end. The end is a united profession, strong in its unanimous determination to seek certain objects. A similar end has been the goal of trade unionism; but the successes of trade unionism have been attained through the solid union and hard-bitten determination of members of trade unions. Actuated by this solidarity and determination, they have devised means, and have induced Parliament to remove certain legal obstacles that stood in their way.

But first they have relied on their own grit and their own resources. They have put their hands in their pockets and paid heavy subscriptions and levies. Dr. Cox, in an address delivered as President of the North of England Branch in 1907, stated that inquiries he had then recently made showed that in the case of six trade unions as to which he had been able to obtain information, the amounts paid by the members for organization and protective purposes alone, quite apart from sick and benevolent benefits, varied from one-fiftieth to one-eightieth of the workman's total income, and we understand that subsequent information showed that in one instance the proportion reached a fortieth of the workman's total income. To take an instance, which is more recent, it appears that the members of the London Society of Compositors paid last year a subscription of 1s. 6d. a week and a levy of 1s., a total of 2s. 6d., or £6 10s. a year. The weekly subscription and levy was high because the members had determined to reimburse the funds of the society for the expenses incurred during a strike in the previous year. This object has been to a considerable extent attained, and the weekly subscription is now 1s. 3d., and the levy 6d., a total of 1s. 9d. a week, or £4 11s. a year. In the return he gets for this are included provident advantages, of which the most important are a superannuation allowance and weekly payments if unemployed, which together account for about ten-thirteenths of the total expenditure. The remaining expenditure is on trade union purposes of collective defence, and amounts probably to about 25s. out of the total of £4 11s. a year. This he is prepared to pay in quiet times, and willingly provides very much more—two or three times as much—in emergencies. Other workmen in employments in which wages are lower make a contribution as large in proportion to their earnings. No apologist for the profession can claim that doctors make altogether a good showing when compared with the above-mentioned and many other classes of workmen. This may seem a digression, but the point of it is that it is not the Trade Union Acts that count, but the spirit of the men who have caused them to be enacted, and who now make use of them. The question that arises for us is whether the same end may not better be attained without resorting to the same means, which are clearly in certain respects not well adapted to our purpose.

In this country it is not essential that a combination of persons to promote a common object should have legal sanction, but if it is to have any corporate existence in the eye of the law and enjoy a legal status it must obtain State recognition. In seeking this it appears to have three courses open to it—to obtain a charter from the Crown, to become registered under the Companies Acts, or to seek registration under the Trade Union Acts. The licensing corporations possess charters, some of them of respectable antiquity. The British Medical Association is registered under the provisions of the Companies Acts which permit recognition of an organization which does not trade for the profit of its individual members. It was brought into existence to supply the deficiencies of the chartered corporations, which, with real regret it must be admitted, have not risen to the height of their opportunities. Had they shown a higher sense of duty, greater wisdom, and more elasticity, the British Medical Association might never have been called into existence to take up the work they left aside. A few years ago the British Medical Association applied for a Charter from the Crown which would have greatly facilitated the work which the members of the profession, for the most part diplomates of the chartered corporations whose help had failed, had set it to do. The Association had to undergo the humiliation of the refusal of a State recognition often granted to bodies of far smaller membership and far less importance to the welfare of the State. It is useless now to seek to apportion the blame for this rebuff, but it was not all on one side.

The strength of trade unionism lies not in forms or laws, but in the union and solidarity it has bred. This solidarity it has brought about partly by encouraging the growth of a feeling of fellowship among men engaged in the same calling and partly by politicly making the growth of this feeling keep pace with the material interests of the individual members.

The proposal to form a medical union or unions registrable under the Trade Union Acts is one which needs to be threshed out, and, so far as the administration of the Journal is concerned, the desire is to give full scope for the beating out of the grain from the chaff. While, therefore, inviting discussion, we venture to submit that the use of counters should be given up, and that we should deal with real values, distinguishing the essential from the accidental. Some of the discussion which has already taken place seems to have failed to make this distinction.

SYPHILIS AND CANCER OF THE TONGUE.

Despite the great amount of work that has been done in different parts of the world during recent years in the various problems of cancer, the immediate causative factor has so far eluded even partial solution; and the search for a cause would seem hitherto to be as fruitless as the mediaeval quest of the philosopher's stone. Only in a negative sense can we be said to have approached the difficulty. Many of the opinions and speculations of former days that clustered round and obscured the problem have been got rid of, but there are only contending theories still with which we may attempt to satisfy an insistent question. There will be those who will continue to advocate a germ or parasitic theory of cancer genesis; and, indeed, of the finding of parasites there is no end, but all have come, whatever may have been their temporary vogue, sooner or later to nothing. It is but natural, too, that the mind of man in constructing hypotheses on which to base a prospective investigation should choose the most easy generalization from sets of known phenomena. It is easy, for example, to comprehend a possible parasite, not perhaps demonstrable by known means of staining, cultivation, or isolation, which, becoming incorporated with the substance of a cell, causes division and propagates with it, and any one possessed of such a belief may easily spend his life in this quest, but it is no difficult task to argue, both *a priori* and from recent observations, against such an assumption. The problems, however, of that unceasing cell division which constitutes cancer are probably only soluble as parts of a greater biological problem. A recent writer has put the case as follows: "Those properties that pass from parent to offspring, shaping the growth of constituent parts, marvellously reproducing in minute pattern the structural characteristics of the ancestors as a species, or still more marvellously repeating the little details that give an individuality to a progenitor, have always been in the domain of mysterious fact, obtrusive to our eyes, but inscrutable to our minds. All the cellular components of the living body obey laws governing the limits of their reparative or reproductive activity. Why they should cease multiplying when they have fitted into or restored a predestined scheme is quite beyond our knowledge. Cancer is anarchistic to the economy. It is a multiplication of cells derived from parent tissue normal to the body; springing from it, it grows without heed to the order of things, lawless in its origin, lawless in its progress. Until we recognize that, ignorant of the laws that govern and limit normal growth one cannot hope by some chance observation to light upon the causes that operate at the inception of that cellular disloyalty, we cannot appreciate the profundity of the problem."[1]

Whatever be the immediate cause of malignant change, there are often predisposing or mediate factors that preside at its onset, and we may suppose that, were these mediate factors obviated, the cancerous process would not ensue. By piecing together the appearances found in precancerous and early cancerous lesions we can formulate a series of pictures of the events in their sequence. But it would be wrong to generalize from such observations, for the simple reason that in the great majority of cancers no history of definite preceding, nor histological evidence of accompanying, irritation can be obtained. The factor of irritation is, however, sometimes very definite. To the old classic example of the irritating clay pipe as a predisposing cause in the production of cancer of the lip may be added other striking examples, such as the kangri pot of Kashmir in association with the occurrence of squamous carcinoma of the skin of the abdomen, betel-nut chewing with the production of epithelioma of the cheek and tongue, lupus with skin cancer, bilharziosis with cancer of the bladder, nematode with cancer in the rat (Fibiger),[2] and the accidental production of epithelioma of the hands amongst *x*-ray workers. In other cases, again, an association of different definite irritants has a conspicuous part in bringing about malignant cellular proliferation.

In the lecture published in this issue Mr. Charles Ryall traces the various factors that, operating together, bring about cancer of the tongue. These he considers to be primarily syphilis, and secondarily smoking and other milder forms of irritation on a vulnerable organ. The points he puts forward in support of his thesis are the results of clinical observations extending over many years at the Lock and at the Cancer Hospitals. By keeping under observation cases of syphilis that showed lingual lesions he has noticed the onset of cancerous ulcers in the tongue, and by a careful interrogation of patients who presented epithelioma of the tongue he has found a history of syphilis in over 80 per cent. of cases. In further support of the association may be evidenced the frequency with which cases of lingual cancer give a positive Wassermann reaction of their serum. The mild irritation of tobacco smoking under normal circumstances may not affect the tongue, but when the patient is the subject of syphilis it would seem to determine the localization of tertiary lesions in that organ. A tertiary syphilitic lesion of the tongue may be, and probably often is, a precursor of lingual cancer. The vulnerable organ now responds to irritations which otherwise would be innocuous, and chief amongst these sources of irritation is tobacco. In syphilitic glossitis there are changes in the epithelium, proliferations here and denudations there, whilst beneath the papillae there are going on cellular changes, round-cell infiltration, lymph stasis, and fibrotic contraction, resulting in the production of superficial puckering and fissures. In these fissures débris collects and small ulcers are apt to form; continually irritated, the epithelium of the edges grows into these ulcerated fissures, into an abnormal non-resistant tissue, and malignant proliferation of epithelium may result. It may be that the mild

[1] Leitch: Fourth Report of Caird Cancer Research Laboratory.
[2] British Medical Journal, 1913, vol. i, p. 400.

irritation produces an exaggerated repair by epithelial cells, and that this reparative tissue itself, still subjected to irritation, goes on reproducing; but why, on passing beyond the confines of its focus of origin to where the irritation no longer obtains, it should not be arrested, is a crucial fact for which no one has furnished a plausible explanation.

In the later stages of such an ulcer the diagnostic points are clear, but while it is still minute and productive of but little pain only microscopic examination of a portion removed can settle its nature, as the late Sir Henry Butlin so frankly and conclusively pointed out in this JOURNAL a few years ago. Mr. Ryall emphasizes the undesirability of attempting to solve the condition by the administration of anti-syphilitic remedies, or by the result of the Wassermann reaction, seeing that such a large percentage of lingual cancers supervene on, or are associated with, syphilitic tongue lesions. An early diagnosis is essential, and under these circumstances operative measures bring hope of total eradication of the disease, and much can be done at any stage to mitigate, if not to cure, a most distressing condition; but, in view of the part that syphilis plays in the production of lingual cancer, it will be agreed that here, at any rate, thorough treatment of a predisposing condition that is so clear may succeed in preventing such a grave sequela.

MILK AND DAIRIES BILL.

ONCE more the President of the Local Government Board has brought in a Milk Bill. Every year that he has occupied the position he now so worthily holds the President has brought in, or intended to bring in, a Milk Bill. Some years circumstances were too strong for him, and the Milk Bill was crushed out by bills which were considered more important. Other years the Milk Bill saw the light of day, but after a brief existence was cast into that limbo for bills where they never become Acts. One died a few weeks ago when the last Parliament was prorogued. The new bill, phoenix-like, arises from its ashes. In the main it is very like its predecessor, and we sincerely hope that it may meet a better fate. The main objects of the bill are to provide for: The more effective registration of dairies and dairymen; the inspection of dairies, the examination of cows, and the examination of milk; the prohibition of the supply of milk from a dairy where such a supply has caused or would be likely to cause infectious diseases, including tuberculosis, and the prevention of the sale of tuberculous milk; the regulation of the importation of milk so as to prevent danger to public health arising therefrom; the issue of regulations for securing the supply of pure and wholesome milk, and the establishment by local authorities in populous places of milk dépôts for the sale of milk specially prepared for infants. The provisions as to the inspection of dairies and the prohibition of the supply of milk are based on the provisions of the Public Health (Scotland) Act, 1897, and the clause as to the prohibition of the sale of tuberculous milk is taken from the model milk clauses which have been incorporated in many local Acts, but the scope of the enactment is somewhat extended. Under the order of the Board of Agriculture, as to payment of compensation in cases of slaughter, which comes into force on May 1st the Treasury has agreed, subject to the assent of Parliament, to sanction the payment of one-half the net amount to be paid for compensation for the next five years.

In the bill there are two entirely new clauses, No. 16, which deals with the cost of structural alterations, and No. 24, dealing with procedure on appeals to courts of summary jurisdiction. Clause 14 deals with the appointment of veterinary inspectors, and says that the council of any county or sanitary authority shall, when required by the order of the Local Government Board, appoint not only veterinary inspectors, but also a bacteriologist. This is a step in the right direction. In Clause 27, which deals with the application to London, there is a very important omission. In the former bill the London County Council occupied a position of paramount importance. The paragraph in the clause giving them that power in the last bill has been deleted and the powers under the bill are given to the sanitary authorities, and only in case of default to the County Council. If this had been proposed during the period when the Progressives were in power in London, it would have met with determined opposition from that party. But the policy of the Municipal Reformers has been in favour of delegating powers to the borough councils, who are for London the sanitary authorities, and they may accept the clause as it stands and look upon the President of the Local Government Board as a good Moderate. On the whole, we are inclined to think that if in carrying out a Milk Bill the London County Council was given the right to shape the policy the work would be done more energetically, and the effect would be more harmonious than it would be if carried out by several authorities within the area of the county. In dealing with the question of a pure supply of milk, any bill on right lines should give power to see to the health and cleanliness of the cow, its environment, and the people who care for it. The bill, we think, gives this power. Under Clause 15 the Local Government Board asks for large powers to make such general or special orders as it thinks fit for the purpose of carrying out the Act, and among these powers are the care of the cow, the cowshed, the workers, and the vessels used for or containing the milk. Though it is not so clear that the bill under 15 (1) (*g*) gives the Local Government Board power to deal with the transit of the milk, yet such power may be obtained under this subsection, which reads: that an order may be made as to "the manner of conveyance of milk intended for sale for human consumption, and the identification of churns and vessels used for such conveyance." When the milk has arrived at the milk dealer in the town, under the interpretation of the Act the expression "dairy" includes not only any farm, farmhouse, or cowshed, but any milk store, milk shop, or other place from which milk is supplied, and with these places the bill gives the sanitary authority power to deal. The distribution of the milk from the shop by the milkman on his rounds gives great opportunity for tampering with the milk and the introduction of impurities. Power to deal with these evils does not seem to be specifically given in the bill, but that is a matter in which it can and should be strengthened during its passage through the House. The bill as it stands, though far from perfect, is a distinct step in the right direction, and if the friends of public health in the House of Commons are determined that the people of this country shall have pure milk to drink, and unite in amending the bill to achieve this purpose, we are hopeful that the bill, when it becomes an Act will accomplish the end they desire.

The Milk and Dairies Bill does not apply to Scotland

or Ireland, but as far as Scotland is concerned the gap has been filled by the Milk and Dairies (Scotland) Bill introduced by the Secretary for Scotland on April 1st. We are glad to note that by this Scottish bill it is intended to ensure the purity of milk supplies and to regulate dairies in Scotland, as the purity of the supply, which is of paramount importance, is thus given due prominence. Clause 3 of this bill deals with the appointment of veterinary inspectors, but differs from the English bill in that it makes no definite reference to the appointment of a bacteriologist—a defect which should be remedied. The Scottish bill is more definite in the question of the notification of employees suffering from illness, for it declares in Clause 12 that if any person resident at or employed in connexion with any dairy, or who resides in the same house as any person so employed, shows symptoms of any infectious disease the dairyman on becoming aware thereof shall forthwith report to the Medical Officer of Health for the district the existence of such illness; it would provide also that it shall not be lawful for any such person to milk cows or handle milk vessels or in any way to take part or assist in the conduct of the trade of a dairy. The veterinary inspector would have power, with the consent in writing of the owner, to apply to any cows in any dairy within the district the tuberculin or other reasonable test for the purpose of discovering whether such cow is suffering from tuberculosis. To the local authority power is given to enforce the provisions of the bill, but it may if it think fit delegate that power to a committee or committees. These are some of the differences between the English and the Scottish bills in so far as they more precisely touch the question of public health. It would be for the benefit of the community and the improvement of both these bills if their authors, old colleagues in the London County Council, would put their heads together and arrange that the deficiencies in one bill be supplied by the good points in the other, so that both countries might ultimately have the advantage of the best possible Milk and Dairies Act.

ACTIVATORS IN FOODS.

DURING the last five or six years many references have been made to observations and researches tending to show that certain common articles of diet contain minute quantities of substances which are of so much importance in nutrition that their absence may prevent the normal growth of young animals, or lead to actual disease in them or in adults. The steps by which the subject has been opened up have been recorded from time to time in the JOURNAL, but the matter possesses so much scientific interest, and has already attained so much practical importance, and is likely to increase so greatly in both respects, that the summary of present knowledge which has been prepared for us by Mr. E. A. Cooper, Beit Memorial Fellow at the Lister Institute, will be read with profit, and will be useful for reference in the future. The facts ascertained as to the etiology of beri-beri first put physiologists on the track.[1] The epidemiological observations of Eykman and Braddon showed that beri-beri was associated with a diet of polished rice, that is to say, rice from which the outer covering was completely removed. Braddon added the significant observation that the disease did not ensue if the rice was parboiled before polishing. The characteristic lesion of beri-beri is polyneuritis, and Eykman showed that birds fed on polished rice developed extensive polyneuritis, and further that this condition could be cured by giving the birds aqueous extract of rice-polishings. Later it was shown that exclusive diets of various pure carbohydrates induced polyneuritis in birds, and that foodstuffs other than unpolished rice could prevent it, but that their preventive properties were destroyed by heating to 120° C. An exclusive diet of polished rice causes a loss of body weight as well as polyneuritis, and it has been found that the addition to the polished rice diet of an amount of a foodstuff sufficient to prevent neuritis may fail to check the loss of weight. The general conclusion is that there is removed from rice during the process of polishing a nitrogenous substance which is essential to normal metabolism, especially of the nervous system. It is probably a pyrimidine base, but it exists in such minute quantities and is so easily destroyed during chemical manipulations that its exact nature has not yet been ascertained. The outbreaks of beri-beri which have occurred from time to time among the crews of sailing ships on long voyages have been an epidemiological puzzle. Their investigation in the light of the new knowledge as to tropical beri-beri seems to have proved that they are due to replacing rye bread and peas in the crews' dietary by white bread, and has suggested wider generalizations; *pari passu* the problem of scurvy has been attacked along the same lines. Here Mr. Cooper has to deal with very recent work, and what he has to say with regard to scurvy and infantile scurvy and their dependence on a deficiency of certain specific accessory substances in the diet will be read with particular interest in this country to-day. Of even greater immediate practical importance here and now are, perhaps, recent investigations showing that the abstraction or destruction of certain substances present in small amounts in normal or unmodified foods leads to a failure of growth. The composition of these substances has not yet been ascertained, but whatever their nature they appear to possess the power of so stimulating metabolism as to cause growth at the normal rate. It will be seen, therefore, that these observations on beri-beri, on scurvy, and on growth, have opened up a new field of inquiry in dietetics. They serve to show that some modern methods of preserving and preparing food have been running on wrong lines, that we have been disturbing the balance of nature, and that we must hark back to the original scent.

[1] There was a short discussion on the subject in the Section of Physiology at the annual meeting of the British Medical Association at Liverpool last year, opened by a paper by Funk (BRITISH MEDICAL JOURNAL, September 28th, 1912, p. 787).

VENTRIFIXATION OF THE UTERUS.

THE recent discussion on ventrifixation in the Obstetrical and Gynaecological Section of the Royal Society of Medicine clearly shows how much diversity of opinion still exists among representative gynaecologists upon fundamental points, such as the general usefulness of the operation, and the risks, immediate and remote, which attend it. The introducers of the discussion were all convinced advocates of the operation, two of them—Professor Henry Briggs and Dr. Arthur Giles—having between them performed it in over 1,100 cases, with results which gave them unqualified satisfaction. At the other extreme of opinion was Professor Herbert Spencer, who stated that he had only done the operation 27 times in 1,000 abdominal sections, and declared his conviction that, "as ordinarily performed," the operation was unscientific and dangerous. Other critics, less strenuous in their opposition, regarded with disapproval the frequency with which the operation was performed at the present time. Underlying these striking differences of opinion there was clearly an equal divergence upon the fundamental question as to the clinical importance of the so-called malposition of the uterus which ventrifixation is designed to correct. Little divergence of opinion emerged upon the importance of correcting prolapse and procidentia, and the value of

fixation of the uterus when combined with plastic repair of the pelvic floor seemed to be very generally accepted, though Dr. Archibald Donald declared that all cases of prolapse could be permanently cured by colpoperineorrhaphy alone when properly performed. With regard to backward displacements, however, great diversity of opinion clearly existed among gynaecologists of large experience, and to this difference is mainly attributable the striking want of unanimity displayed in regard to ventrifixation. By more than one speaker the introducers of the discussion were asked, "What are the symptoms of backward displacement?" Until gynaecologists have settled this fundamental question no discussion of the methods of treating this condition can reach conclusions likely to be accepted as authoritative by the profession. Two or three points of practical importance finally emerged from the discussion. When ventrifixation is properly performed—that is, in such a manner as to leave the fundus free—it may be accepted that there is practically no risk of complications should pregnancy subsequently occur. The cases of rupture of the (ventrifixed) parturient uterus which have been from time to time recorded have now been shown to be the result of faulty technique. Further, it may be accepted that in a very large proportion of cases—95 per cent. in Dr. Giles's series—the malposition can be permanently corrected by this operation. On the other hand, it must be borne in mind that the operation is not free from either operative or post-operative risks; fatalities have been recorded in the practice of gynaecologists of repute from peritonitis and from pulmonary embolism, and more remotely from intestinal obstruction due to strangulation of a coil of intestine by bands of peritonitic adhesion formed between the parietes and the uterine wall, or between the shortened round ligaments and the uterus. An operation so simple and easy of performance as ventrifixation is undoubtedly attractive to operators; but it is clear that it should not be recommended or undertaken without due consideration of the question which so often taxes the surgeon's judgement—namely, Is the malady of sufficient gravity to justify the risk to life involved in the proposed operation?

THE WELFARE OF THE DEAF.

IN the penultimate of the series of lectures which he has been delivering under the auspices of the National Bureau for Promoting the General Welfare of the Deaf, Dr. Kerr Love showed that a great proportion of all cases of deafness observed during the first months of life are due to congenital syphilis, and put in a strong plea for the compulsory notification and treatment of all cases of syphilis in children.[1] In his concluding lecture he dealt mainly with congenital deafness of another type, that which is both congenital and hereditary. According to his investigations this form of deafness could not be held responsible for more than 15 per cent. at the outside of all instances of deaf-mutism. Previous discussions on the point had been vitiated, he suggested, by the frequent acceptance of deafness in several children of one family, or of cases of partial deafness or hardness of hearing in an earlier generation as proofs of inheritance. Deafness was a symptom which might not only be due to a very large number of totally different causes, but was present to a greater or less extent in the vast majority of all individuals at some time or other of their existence. He agreed that members of some families showed a special tendency to develop oto-sclerosis, and that this might possibly be a form of hereditary deafness; but little was known as to its true etiology, and meantime it was safer to admit to the rank of hereditary deafness only cases in which the patient was not the subject of congenital syphilis, but was born deaf, and was a member of a family in previous generations of which like cases were known to have occurred. Though precise Mendelian ratios could hardly be expected among the deaf, a large collection of family trees the lecturer exhibited supported the conclusion that true hereditary deafness conformed to the Mendelian theory. The condition was transmitted either wholly or not at all. Its subjects were hardly ever merely just hard of hearing, or, conversely, totally deaf, their degree of perception of sound was a fairly constant quantity. The feature was recessive, and was most commonly transmitted through hearing people. Assuming that hereditary deafness was Mendelian, Dr. Kerr Love proceeded to show that consanguinity in the parents produced the maximum chance of hereditary deafness occurring in the offspring. Taking his estimate of the total number of hereditary deaf people in Great Britain—namely, 3,600—and those of their forbears whom he assumed to be deafness-carriers, though possessed of hearing themselves, he pointed out that there must be over 10,000 people in the country whose marriage was likely to be followed by the propagation of deaf-mute but otherwise healthy children, and that repressive measures, if they were to be successful, must apply to the whole of these 10,000, and not only to those who were themselves the subject of deafness. He showed himself, however, by no means in favour of direct interference with the marriage wishes of the deaf. The right step to take was to put an end to conditions originally established by well-meaning persons in the interests of the deaf themselves, but which in the long run tended to increase the number of deaf persons. Communication between deaf persons being easy, and a bond of union between them already existing, it was natural that the deaf should tend to associate with the deaf, and hence that they should intermarry. This tendency was greatly promoted by the present custom of segregating deaf-mutes during the educational period of their life, and the remedy lay in the spread of the day-school system, so that the deaf out of school hours should not associate with one another. Furthermore, speech and lip reading should be made the ordinary means of communication between teacher and scholar and between the deaf and their hearing friends. Finally, all the deaf during the last year of their school life should be warned against the danger of intermarriage.

[1] BRITISH MEDICAL JOURNAL, vol. ii, 1912, p. 1682.

INTERMEDIATE HOMES FOR INCURABLES.

"THE Christianity of the future," said George Tyrrell near the end of his life, as we have been reminded by the article in the Literary Supplement of the *Times* which made some stir a fortnight ago, showing once more, if there were need, that man doth not live by bread alone—"the Christianity of the future will be mysticism and charity." The saying runs counter to some current doctrines reflected in current legislation. But charity rests on an impulse of human nature which helps most to distinguish man from the brute. The feeling of pity for misfortune is deep-rooted in at least the higher races of man, and will not easily be bred out. Charity suffereth long and is kind, and nowhere is there greater scope for the exercise of this long-suffering virtue than in caring for those incapacitated from taking their due share in the work of the world by incurable disease or deformity, and of such none can make a stronger appeal than the young. Our attention has recently been called to the fact that there was a chasm in this field of charity across which certain charitable persons have built a slender bridge. The Home for Incurable Children at "Northcourt," Hampstead, is well known to many, and the larger homes for incurables, such as those at Streatham and Putney, still better, but at Northcourt girls are not kept after the age of 16, nor are women admitted into the Streatham or Putney homes until they are 30 or 35. It is, therefore, often a problem where to send them during the intervening years. They are frequently homeless, or, if their

parents are living, they are not able to afford to give them the care and attention necessary to maintain the benefit derived from previous treatment. In order to meet this want, the first "Intermediate Home for Girls" was opened at Upper Hale, near Farnham, about three years ago. It is known as The Mary Yolland Home, and is primarily intended for cases from Northcourt, who pay 7s. a week; when there are vacancies, however, others are admitted for a small extra payment (usually 8s. a week). These payments do not cover the cost of upkeep, so that subscriptions and donations are gratefully received by the Honorary Treasurer at 14, St. Stephen's Square, London, W. Applications for admission must be made on printed forms, to be obtained from the Honorary Secretary, 5, Kensington Square, W., and must be approved by the medical officer and committee. No person who is epileptic, mentally afflicted, or phthisical is eligible for admission. There are ten beds, and there is a vacancy now, owing probably to the fact that two girls have become well enough to earn their own living, and are leaving the home. The President is the Bishop of Winchester, and there is a strong representative local committee, in addition to a committee of management in London. Dr. Coad of Farnham is the Honorary Medical Officer and Dr. Rice-Oxley the Honorary Consulting Physician. The home is excellently situated on high ground, and has a pleasant, well-stocked garden. Dr. Coad is able to report that under the matron's judicious care the inmates have been encouraged to help themselves more and more, so that they are doing things for themselves which six months ago both they and others thought it impossible for them to do. The girls are taught and encouraged to do needle-work, and won gold stars at the Home Arts Exhibition at the Albert Hall in May, 1911. They are glad of orders, and receive 15 per cent. on the price of all articles sold. Any one caring to visit the home will be welcomed by the matron.

IN MEMORIAM—EDWARD ADRIAN WILSON.

On March 27th a memorial service for Dr. Adrian Wilson was held in the chapel of Cheltenham College, the day being specially selected as the probable anniversary of the death of Wilson and his fellow explorers in the Antarctic expedition. Cheltenham College has always shown itself very jealous in caring for the memory of its old boys who have distinguished themselves, and in honouring Dr. Wilson it links up the past with the present, and so exerts a profound influence in making them feel that their future will be appraised, when the time comes, by those who, whether now their masters, schoolfellows, or mere onlookers, will then be their critics. Ceremonies of this kind are no rare occurrences at Cheltenham College, for it has become a great training school for the army, and it is owing to this partial specialization that the very beautiful chapel contains so many mementoes of men who have died in the military service of their country. At the east end is a stone reredos of rare beauty, raised to the memory of fifty-four Old Cheltonians who were killed in the last Boer war, and scattered over the walls and placed beneath the canopies of the stalls are brass tablets to the memory of those who distinguished themselves in their various careers. Among these tablets is one to Dr. Wilson's uncle, Sir Charles W. Wilson, K.C.B., F.R.S., who surveyed Jerusalem, Palestine, and Sinai, and went up the Nile to open communication with Gordon at Khartoum. Among the statues in the reredos are three of especial note at this moment—one to Livingstone, whose centenary has just been celebrated; one to Sir John Franklin, who discovered the North-West Passage; and one to Dr. Edward Jenner, who lived in Cheltenham, and made some of his vaccine investigations there. Truly is Wilson honoured beneath the shadow of the effigies of departed heroes and benefactors. Perhaps the most striking monument in this chapel is the memorial to the late Frederic W. H. Myers; it consists of a bronze medallion portrait and a remarkable emblematic wood carving of the Tree of Life interspersed with birds and animals, the whole leading up to a fresco by Eadie Reid portraying the commencement of the Resurrection. The legend on the tablet—"Striving to win his own soul and his comrades' homeward way"—seems especially applicable to Wilson and his companions, whose gallant attempt to win their "homeward way" failed by only eleven miles! The exact nature of the memorial to Wilson has not yet been determined. That it will be worthy of him and fitting may surely be anticipated, because the whole atmosphere of the school is one of beauty, of duty, and of reverence, and the spirit of the man who was the subject of the day's reunion in this Pantheon of distinguished Old Cheltonians will arouse corresponding high ideals in the minds of those who came under the spell of his courage and devotion and who have the responsibility of perpetuating his admirable qualities. At the service there was a crowded attendance—the 600 boys of the school; the father, mother, and other relatives of the deceased, and many respectful sympathizers and admirers. The choral service was intoned by the Rev. P. Hattersley-Smith, well known to all Old Cheltonians, and a very eloquent and human address was given by the Principal, Canon R. Waterfield. In recording the names of Wilson and his deceased comrades the whole congregation stood up, and a great impression was produced when the Principal declared that it was Dr. Wilson's intention, had he returned safely, to have taken orders. Canon Waterfield also read a letter from the late Captain Scott, in which he said that "Wilson was the finest character I ever met. Practical, loyal and unselfish, humorous and tactful—the most popular member of the party." When the memorial has been placed in the chapel, Cheltenham School, the Principal said, will have done its best for one of its most distinguished sons. It trained him for five years in his youth, and it will preserve his noble example and courage by a permanent mark which shall keep him ever present to the young minds whose best appreciation will be shown by their efforts to emulate him.

DOCTORS IN DISPRAISE OF MEDICINE.

It is remarkable that some of the bitterest things said in dispraise of medicine have come from the mouths of doctors. In 1748 François Quesnay, whose reputation as a physician is overshadowed by his fame as a pioneer in social economics, published an essay on the great quarrel between the physicians and surgeons in France. He begins by saying that the first point to be decided is whether these professions are useful or injurious to society and whether they should be abolished or allowed to continue to exist. It may be gathered that he was sceptical as to the utility of drugs, for he points out that among the poor treatment is very simple, consisting in bleeding and the administration of *tisanes*, a few purgatives, and very little else. This, he says, is "perhaps the best" that can be done. It is related that when Lieutaud, first physician to Louis XVI, was near his end in 1780, his confessor, wishing to assure himself that he was in a right frame of mind, plied him with questions as to his belief in all the mysteries of religion. At last the dying man, wearied by these interrogatories, declared that he believed in everything except medicine. James Gregory, President of the Royal College of Physicians, Professor of the Practice of Medicine in the University of Edinburgh, and First Physician to His Majesty in Scotland, in his *Memorial to the Managers of the Royal Infirmary* (second edition, 1803, p. 137), says: "Of the many bitter sarcasms which I have heard of on my own profession and professional brethren, one of the severest, I think, was that of

Dr. Garth on his deathbed; when one of his friends who thought he had repeatedly owed his life to the care and skill of the doctor came to see him, sorry to lose his friend and physician, yet anxious to ask him what physician he would advise him to send for if he should again be taken ill, 'Send for the nearest,' said Dr. Garth." These utterances need not be taken too seriously. They are indications of the state of mind expressed by Du Maurier many years ago in a drawing showing an anxious wife trying to induce her sick husband to send for one of his colleagues and being met with a refusal because "we all go in for thinking each other quacks now." Doctors as a class are perhaps, in Bowen's famous phrase, too conscious of each other's unworthiness, and are apt in their haste to extend this feeling to the art which they practise.

INDIAN REVENUE AND THE OPIUM TRADE.

THE financial statement recently laid before the Viceroy's Legislative Council by Sir Guy Fleetwood Wilson shows the Indian revenue to be in a highly satisfactory position. A surplus of some seven millions has been realized on the year 1912–13, derived for the most part from railways and opium. In regard to the latter, it appears that, owing to high prices obtained from sales by the Government of certified opium in the earlier months of the financial year, the actual revenue derived from this source alone is likely to be £5,063,000, as against £3,600,000 which was budgeted for. Sir Guy Fleetwood Wilson, in his annual review of the Indian finances, dwelt upon the novel and exceptional aspect of the opium question with which the Indian Government is now confronted in respect of the trade with China as governed by the agreement of May 8th, 1911. The period of revolution, which was marked by a recrudescence of opium consumption and cultivation, has been followed by repressive action on the part of the Republican Government, which outbids the severity of the former Imperial régime. The result is that in Shanghai and Hong Kong, the great markets of the Indo-Chinese traffic, the trade is at a standstill. The Indian Government claims that its own policy has been throughout correct and simple, and dictated by a sincere desire to help China towards a great moral reform. Sales of Indian opium are suspended; the amount to be sold for non-Chinese consumption in 1913 has been reduced so as to minimize smuggling into China, and the Government has purchased from the native States an amount of Malwa opium which would otherwise have been exported by them to China during the current year. It would appear to follow almost of necessity that a reduction will soon have to be made in the poppy cultivation at present carried on as a monopoly by the Indian Government. Any attempt to enforce the sale of the drug upon China would be resisted here as well as there, and the time is surely fast approaching when the much criticized and oft condemned Indo-Chinese opium trade will be no more.

SANITARY ADMINISTRATION IN ILFORD.

THE population of Ilford, Essex, in 1891 was about 10,000, and in 1911 it was 78,000. This large increase has of necessity involved additional responsibilities in connexion with the sanitary administration of the district, and the urban district council was well advised in 1909 to appoint Dr. C. F. Stovin as a whole-time medical officer of health, he having been a part-time officer during the previous eleven years. Dr. Stovin prefaces his annual report for 1912 with an account of what he conceives should be the relation of a medical officer of health to the district council and to the other officers of the council. The views he expresses would be readily endorsed by other medical officers of health, and are quite in accordance with the recognized policy of the Local Government Board, which is that the medical officer of health must be the head of the Public Health Department. In the course of inspections of houses made by members of his staff, Dr. Stovin appears to have been startled at the large number of drains to comparatively new houses which were found to be defective. Dr. Stovin states in his report that among 277 houses inspected in three years because a drainage nuisance was believed to exist there was not one where the drains were not defective. This serious condition is said to be due to the fact that the by-law of the district council requiring concrete to be laid under every drain laid to a new house has not been sufficiently enforced. It might be supposed with these facts before them that the members of the urban district council would give all the support possible to the medical officer of health in his endeavours to improve the sanitary condition of the town. Instead of this, however, they are alleged to have placed obstacles in his way and hampered him in carrying out his duties. Dr. Stovin suggests that the only way out of the deadlock which has arisen is to ask for an inquiry into the circumstances from some expert authority; the Public Health Committee of the British Medical Association has expressed the opinion that the proper body to make such an inquiry would be the Local Government Board. What objection there can be to carrying out this suggestion it is difficult to understand, and in the interests of good government the district council will do wisely to give effect to it promptly and wholeheartedly.

SECRET REMEDIES AT THE ANTIPODES.

WE referred recently to the fact that the Government of the Commonwealth of Australia had obtained the permission of the British Medical Association to reprint as a parliamentary paper the two volumes, *Secret Remedies*[1] and *More Secret Remedies*,[2] issued by it in 1909 and 1912 respectively. The two volumes are printed together, and form a folio document of 245 pages. The single index given with the second volume, *More Secret Remedies*, is reproduced, and serves as an index to the whole. So far as we have observed the two volumes are reprinted in the Commonwealth Blue Book without alteration or curtailment. No introductory letter or report appears in the print, and apparently the Commonwealth Government is of opinion that the matter speaks for itself, and requires no introduction or recommendation to ensure adequate attention from the public and from the members of the Commonwealth Parliament. It will be seen from a report published at page 724 that the Select Committee on Patent and Proprietary Medicines has resumed its sittings in London, and that further evidence is being tendered on behalf of the proprietors of proprietary preparations. The two volumes, *Secret Remedies* and *More Secret Remedies*, are on sale in this country as published by the British Medical Association, and can be obtained through any bookseller. There can be no doubt that their effect has been to educate public opinion and incidentally to call the attention of proprietors of newspapers to the use which is made of their advertisement columns to commend to the public preparations often sold at most extravagant prices, and for which extravagant claims are almost invariably made.

THE APPOINTMENT OF TUBERCULOSIS OFFICERS.

WE are afraid from information we have received that some of the county councils have not gone about the appointment of tuberculosis officers in a manner most calculated to make this service the most efficient available. It is, of course, quite right and proper for county councils to have the benefit of the advice of the medical officer of the county as a professional man in sorting out and settling points of distinction between various candidates in respect of their special suitability for such a post,

[1] *Secret Remedies: What They Cost and What They Contain.* London: British Medical Association. 1909. (Price 1s., post free 1s. 3d.)
[2] *More Secret Remedies: What They Cost and What They Contain.* London: British Medical Association. 1912. (Price 1s., post free 1s. 3d.)

but it cannot be necessary that candidates for these appointments should, in addition to their special knowledge of tuberculosis, have had special training in public health, a qualification which we believe has been made a requirement for several of these appointments. A competent knowledge of bacteriology is all that ought to be expected in addition to the candidate's special qualifications for the work. There seems to be a disposition in some quarters to make the tuberculosis officer a member of the staff of the Public Health Service, in subordinate charge of a subdepartment. There must be co-operation, but subordination is unnecessary and undesirable. In matters of administration, in the wider meaning of the term, the medical officer should be in command, but in his clinical work the tuberculosis officer should be unhampered. The importance of the clinical work makes it always desirable that he should have some knowledge of general practice, and this experience is far more valuable than the possession of the D.P.H. Medical officers of health would be well advised to give attention to this aspect of the subject, and to take care that they are not biassed in favour of candidates who may have shown a disposition to specialize in public health administration.

AMENDMENT OF THE INSURANCE ACT AND REGULATIONS.

THE State Sickness Insurance Committee at its meeting on Thursday, March 27th, spent the greater part of its session in considering a report on the amendments desired in the Insurance Act and the Regulations made under it. The result of its deliberations will be found in the report published in the SUPPLEMENT, page 304. The attention of readers is particularly directed to these important recommendations, which will be reported to the Council at its meeting on April 23rd, and we would venture to suggest that any observations upon them which members may feel disposed to make should be addressed to the Medical Secretary for the consideration of the Committee, which will meet again on Thursday April 10th.

MR. C. J. BOND, F.R.C.S., senior surgeon to the Leicester Royal Infirmary, has resigned that position. The board has accepted his resignation with regret, and will propose to the governors to elect him honorary consulting surgeon and vice-president. Mr. Bond has been elected deputy chairman of the board in succession to Sir Arthur G. Hazlerigg; in this way he will retain an active interest in the work of a hospital to which, as the board stated in a special minute, he has by his ability and high character rendered great services.

Medical Notes in Parliament.

Mental Deficiency Bill.

THE print of Mr. McKenna's revised Mental Deficiency Bill was issued on Tuesday last. It embodies most of the points agreed upon as a result of the discussions in Committee on the bill of last year, and accordingly differs in some important respects from the original form of that proposal.

The power and manner of dealing with defectives becomes Part I of the present bill instead of Part II in the former one. Part II relates to the central and local authorities for dealing with the mentally defective; Part III is concerned with the certification and provision of institutions, and Part IV with general matters, such as offences, penalties, legal proceedings, etc.

PART I.

Clause 1 is devoted to the definitions of mental defect within the meaning of the Act, which are as follows:

(a) *Idiots;* that is to say, persons so deeply defective in mind from birth or from an early age as to be unable to guard themselves against common physical dangers.

(b) *Imbeciles;* that is to say, persons in whose case there exists from birth or from an early age mental defectiveness not amounting to idiocy, yet so pronounced that they are incapable of managing themselves or their affairs, or, in the case of children, of being taught to do so.

(c) *Feeble-minded persons;* that is to say, persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision, and control for their own protection or for the protection of others, or, in the case of children, are incapable of receiving proper benefit from the instruction in ordinary schools.

(d) *Moral imbeciles;* that is to say, persons who from an early age display some permanent mental defect coupled with strong vicious or criminal propensities on which punishment has little or no deterrent effect.

The definition of imbeciles has been altered from the form proposed in the first bill in which they were described as those who are capable of guarding themselves against any physical dangers but who are incapable of earning their own living by reason of mental defect existing from birth or from an early age. The definition of the feeble-minded differs materially from that which was proposed in the first bill and which gave rise to considerable criticism. It defined them as those who, whilst capable of earning their own living under favourable circumstances, were incapable through mental defect existing from birth or from an early age either of (1) competing on equal terms with their normal fellows, or (2) of managing themselves and their affairs with ordinary prudence. It will be seen that the new proposed definition as applied to children refers to those who are incapable of receiving proper benefit from the instruction in ordinary schools. It is not difficult to prophesy that controversy may arise over the word "ordinary." The definition of mentally infirm persons as proposed in the original bill is omitted. It will be remembered that it related to those who through mental infirmity arising from age or the decay of their faculties are incapable of managing themselves or their affairs.

The Second Clause of the present bill sets out the circumstances under which defectives may be dealt with. On comparing it with the corresponding portion, Clause 17 (1), of the former bill, it will be noticed that defectives "*may*" be dealt with by being sent to or placed in an institution or place under guardianship. In the former bill it was provided that the classes specified "and no other *shall*" be subject to be dealt with under this Act. The new clause provides that a defective may be dealt with under the Act at the instance of his parent or guardian if he is an idiot or imbecile or under the age of 21, or if "in addition to" being a defective person he is either found neglected, abandoned, or cruelly treated, found guilty of an offence or ordered, or liable, to be sent to a certified industrial school, or is undergoing imprisonment or penal servitude, except when in prison under civil process, or who is an habitual drunkard within the meaning of the Inebriates Act, or who is one whose case has been brought forward by the local education authority, or who is in receipt of Poor Law relief at the time of giving birth to an illegitimate child, or when pregnant of such a child. These provisions differ in some important respects from those in the former bill, the most notable alterations being the omission of those "in whose case it is desirable in the interest of the community that they should be deprived of the opportunity of procreating children," and in such other cases "as may be specified under regulations made by the Secretary of State." The provisions also are modified to accord with the new arrangements proposed for the local education authorities under the Elementary Education (Defective and Epileptic Children) Bill which is summarized elsewhere.

Clause 3 relates to the power to deal with defectives at the instance of a parent or guardian, and Clause 4 sets out the authorities at whose instance a defective may otherwise be dealt with. They are either (1) by the judicial authority as defined in the bill, (2) by an order of the court in the case of defectives found guilty of certain offences, or (3) by an order of the Secretary of State in the case of prisoners or defectives in lunatic asylums, reformatories, and industrial schools. The judicial authorities are defined in Clause 17 as being county court judges, police or stipendiary magistrates, or specially appointed justices, or judicial authorities for the purpose of the Lunacy Acts. Clause 5

relates to the presentation of the petitions which may be lodged by a relative or friend of the alleged defective, or by an officer of a local authority, but the petition must be accompanied by two medical certificates, or by a certificate that medical examination was impracticable. The petition must set out various circumstances as detailed in the clauses, and if it is not presented by a relative or by an officer of the local authority, it should contain a statement of the reasons as to why it is not. Clause 6 deals with the hearing of petitions, which may, if desired by the person to whom the petition relates, be conducted before the judicial authority in private, in which case no one shall be present except the petitioner, the person to whom the petition relates, any two other persons appointed for the purpose by the person to whom the petition relates, and those signing the medical certificates and the statutory declaration, except with the leave of the judicial authority. In the cases where the petition is accompanied by a statement that a medical examination was impracticable, the judicial authority, unless the petition is dismissed, shall order a medical examination. Clause 7 relates to variations of the order, and Clause 8 provides that where a person is convicted of an offence, but where the court is satisfied on medical evidence that he is a defective, they may postpone the passing of sentence with a view to procedure under the Act. Clauses 10, 11, and 12 relate to the effects of orders which, except as specified, expire at the end of one year. On renewal orders may be extended by the Board of Control to five years, provided that in the case of a defective under the age of 21, his case shall be reconsidered within three months of his attaining that age. Clauses 13 to 18 contain various provisions supplemental to the foregoing.

PART II.

The Board of Control for the purposes of the Act is dealt with in Clauses 19 to 24. It is to consist of fifteen commissioners, of whom not more than twelve shall be paid. One of the paid and one of the unpaid commissioners shall be a woman, four of the paid commissioners shall be legal commissioners, and four medical commissioners. Those who hold office at the commencement of the Act as commissioners in lunacy become as from the commencement of the Act paid commissioners of the Board of Control. The legal commissioners are to be appointed on the recommendation of the Lord Chancellor after consultation with the Secretary of State, and the other commissioners by the Secretary of State after consultation with the Lord Chancellor. The Secretary of State, also after consultation with the Lord Chancellor, shall appoint one of the commissioners to be chairman, and the Secretary of State may direct the board, subject to his regulation, to appoint an administrative committee. No commissioner other than the chairman shall receive a salary exceeding £1,500 a year. The chairman and the paid commissioners shall hold office during His Majesty's pleasure, and the unpaid commissioners for such a term as the Secretary of State may determine. The various disqualifications for the office of commissioner are contained in Clause 22, and their general duties in Clause 23. They may be said to embrace the supervision and control of the defectives, the co-ordination and supervision of the administration of the Act by the local authorities, and the inspection and certification of places for the reception of defectives. The board is to provide and maintain institutions for defectives with criminal or dangerous propensities, and is to administer the money grants made by Parliament for the purposes of the Act. Clauses 25 to 32, being the remainder of Part II, relate to the local authorities charged with duties in respect of defectives.

Except in the case of the local education authority, the local authority for the purposes of the Act is the council of a county or county borough. The authority is required to constitute a committee for the care of the mentally defective, which may contain persons other than members of the council, and all matters relating to the exercise of authority under the Act stand related to this committee, except the power of raising a rate or borrowing money. It is to be the duty of the local authority, subject to provisions of the Act and the regulations of the Secretary of State, to ascertain what persons in their area are defective, and to make provision for them, provided that they are not required to do so where the contribution out of the money provided by Parliament towards the maintenance of the defective is less than one-half of the cost to the authorities of his maintenance. Exception is made also of those who are under the charge of Poor Law authorities, and nothing under the Act is to affect the powers or authority of the lunacy commissioners or of the local education authority. The duty of ascertaining the defectives amongst the children is cast upon the local education authority, as well as the ascertainment of which of them are incapable by reason of their mental defect of receiving benefit from instruction in special schools or classes. Notice is to be given to the local authority of the names and addresses of defective children by the education authorities.

Parts III and IV of the bill, except as they are modified to suit the other alterations, do not materially differ from the arrangements proposed in the bill of last year.

Defective and Epileptic Children.—A short bill has been introduced by Mr. Pease, entitled the Elementary Education (Defective and Epileptic Children) Bill. It is introduced as carrying out part of the arrangement come to last year in Committee on the Feeble-minded Bill. To meet the general criticism that, in view of the fact that it is found that many children classed as backward, or as more or less defective, prove, as the result of training in special schools, to be educable and capable of being made self-supporting, it was agreed that a bill should be introduced this session to make the Defective and Epileptic Children Act, 1899, compulsory and avoid an unnecessary enlargement of the class of feeble-minded which, under the Home Secretary's bill, may become a charge on the community. The first and operative clause of this small bill introduces words into Subsection 1 of Section 2 of the Act of 1899 which alters its permissive character and makes it obligatory as respects children whose age exceeds 7 years. If amended as proposed by the italicized words, the subsection will read thus:

> When a school authority have ascertained that there are in their district defective children they may, *and in the case of mentally defective children whose age exceeds seven years shall*, make provision for the education of such children by all or any of the following means.

The various means referred to in the principal Act are the establishment of special classes in public elementary schools, the boarding-out of such children for instruction or the establishment of special schools for defective children. The local education authority also may establish special schools for epileptic children, or alone or in conjunction with another authority contribute to the support of existing approved schools or jointly assist in the provision and maintenance of new ones. In the bill now introduced it is provided that the Board of Education, without prejudice to other proceedings, may make a deduction from the grant otherwise due to any local authority who neglects to make the provision required for defective children in its district. It is also provided that a local education authority may obtain an order from a court of summary jurisdiction requiring the parent of a mentally defective child to send it to a suitable certified school failing other suitable provision for the child.

Food Adulteration.—In reply to Sir John Lonsdale and Mr. Peto, Mr. Burns announced that he had in preparation a bill dealing with the question of the purity of food and hoped to introduce it shortly.

London Water Supply.—In reply to Sir John Lonsdale, who inquired as to the reported contamination of part of the London water supply, Mr. Burns stated that the Metropolitan Water Board had found that the very unpleasant taste in the water was due to the decay of algae, and stated that it was not injurious to health. The source of the trouble having been discovered, steps, he said, had been taken to remove the ground of complaint.

School Clinics.—Mr. Pease has informed Mr. King that attendance at clinics for special examination are

allowed by the Board to be registered and counted for grant, provided that satisfactory arrangements are made for the registration.

Epizootic Abortion.—In reply to Mr. C. Bathurst, Mr. Runciman stated that the results of the experiments of the inoculation of cows and heifers as a preventive of contagious abortion had so far been encouraging; but that only the county of Devon up to the present had adopted an Order on the lines recommended by the Deparmental Committee.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

A Dispensary and School Clinic.

The third annual report of the St. George's Dispensary and School Clinic, Surrey Row, Blackfriars Road, S.E., contains an analysis of cases which affords evidence of the extensive work carried on. Especially satisfactory are the figures from the dental clinic, which show that parents are gradually being trained to acquiesce in the treatment of the dental defects found in their children. A large part of the report is occupied by an article by Mr. A. G. Wells upon the work of the nose, throat, and ear clinic. Mr. Wells claims to have been singularly successful in the selection of cases of adenoid hypertrophy upon which to operate, so that although the operation was performed for a great variety of symptoms it was a successful measure in all but a trifling minority of the cases. He also makes some remarks on the connexion between adenoid overgrowth and the symptoms of what has been described as Mucous Disease by Dr. Eustace Smith. Mr. Wells attributes the great success achieved to attention to the following three points: great pains were taken to avoid frightening the children; the anaesthetic was always given by the same anaesthetist; and the children attended regularly after the operation to practise breathing exercises.

Medical Inspection of Children under School Age.

In our summary of the latest report of the medical officer to the Board of Education[1] it was noted that certain passages therein seemed to foreshadow an attempt to secure that children shall be subjected to medical inspection not only during school life, but from birth onwards. The possible advantages of such a measure were described in an annual report of the City of Westminster Health Society some two years ago, and in the latest report of that body is given an account of an actual attempt to secure them. In began in January last year, when this society, which has the advantage of the co-operation of Dr. F. J. Allan, M.O.H., opened in Soho a medical centre; this has carried on throughout the year the work commonly done in well-organized school areas, including the equivalent of entrant, intermediate, and "leaver "examinations, an inspection clinic, the process known as "following up," and the securing of treatment. Knowledge of the children was in the first instance obtained through the operation of the Notification of Births Act, the mothers being afterwards persuaded to bring the children at the desired intervals to the inspection centre, where the work was done under the supervision of Dr. David Forsyth. Altogether some 374 children were examined (including re-examinations). The more important defects stated to have been observed are set forth in the following table:

Age Period:	0-1 Year.	1 Year.	2 Years.	3 Years.	4 Years.
	per cent.	per cent.	per cent.	per cent.	per cent.
Teeth	—	2.6	18.1	34.0	63.6
Tonsils	—	7.8	16 9	24.0	26.9
Adenoids	1.5	10.4	22.9	38.0	33.3
Rickets...	13.0	25.9	9.6	8,0	3·0
Diet modified ...	49.6	22.8	6.0	—	—

[1] BRITISH MEDICAL JOURNAL, January 11th, 1913, p. 79.

The numbers on which this table is based are small, but inasmuch as they represent, we believe, the first published statistics in regard to the physical deficiencies of the child population in each of the first five years of life, they possess a certain interest. The outstanding feature of the table is the rapid rise year by year in the proportion of disease, this being specially notable and continuous in the case of dental caries, a defect which is possibly responsible for more ill health among children than any other single cause. It is pointed out in the report that a large majority of the children at the age period 0 to 1 were found to be healthy, but that only a small minority reached the fifth year without developing at least one physical defect of some kind. It is added that the later the age the more extensive usually was the disease, except, of course, in regard to rickets. The inferences drawn are that large numbers of children healthy in every respect at birth at present become within five years the physically defective entrants whom the educational authorities are required to restore as far as possible to their original state of health. Since most of these defects are preventable, and can be remedied more speedily and more cheaply during infancy than school age, it is suggested that in large degree the problem of the defective child resolves itself into the problem of the under-school-age child. Finally, it should be noted that the children to whom the report relates came mainly from homes not of the poorest class, the fathers being chiefly tailors, cooks, waiters, policemen, and firemen. Hitherto the work has been confined to the more northerly half of the city of Westminster, but the society hopes to extend it. It regards it as of great educative value.

BIRMINGHAM.

Hospital Saturday Fund.

The Hospital Saturday Fund for last year, which was the fortieth annual collection, amounted to £22,842 2s. 4d., and is the largest amount ever collected in one year. At a meeting of the board of delegates £10,000 was voted for distribution among the medical institutions of the city. The total number of patients admitted into the convalescent homes supported by the Hospital Saturday Fund was 3,429, distributed as follows: At Tyn-y-Coed, Llanrhos, 1,245 men; at Marle Hall, Llanrhos, 1,446 women; at the Red House, Great Barr, 632 children and 106 women. Since the fund's first convalescent home was established twenty-one years ago, 44,770 patients have been received—19,304 men, 19,241 women, and 6,225 children. The home for consumptives—the Sir William Cook Memorial—on Romsley Hill, will be opened during the summer, and part of the building will be used before then for the treatment of male patients. The Insurance Act was a disturbing factor in the collections at certain works, but happily the great majority of contributing firms continued their subscriptions, and in nearly all cases in which they were suspended the collections have been commenced again. There is no valid reason why the contributions under the Act should interfere with the Hospital Saturday collections, as the benefits offered by the fund are distinct from those accruing under the Act. The hospitals of the city are still required for the wives and families of insured persons, and even for insured persons themselves for consultations and for special and institutional treatment, while the Hospital Saturday convalescent homes are needed just as before.

Birmingham Medical Institute.

In the annual report for 1912 the financial position of the institute is shown to have been considerably improved. The special fund for the improvement, which was started last year, has reached over £500, and there has been an increase of £25 in subscriptions. The library now contains 15,026 volumes; during the year 173 volumes were added; 67 periodicals—39 foreign and 28 British—were supplied to the reading room. The following officers have been elected for the ensuing year: *President*, Mr. Christopher Martin; *Vice-Presidents*, Dr. Douglas Stanley and Dr. Henton White; *Honorary Secretaries*, Dr. W. Glegg and Dr. Beckwith Whitehouse; *Honorary Librarians*, Dr. Branson and Dr. Sawyer; *Honorary Treasurer*, Mr. Frank Barnes.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

DR. LIVINGSTONE IN 1857.

AT the March meeting of the Directors of the Edinburgh Medical Missionary Society, Professor Crum Brown, President, in the chair, Dr. Sargood Fry read the minute of a breakfast meeting of the society which had been held on September 23rd, 1857, when Dr. Livingstone had been present as a guest. Professor J. Y. Simpson and Professor James Miller had commended the medical and missionary work of the great explorer; and Dr. Livingstone had given some notes of his surgical, medical, and obstetrical practice in Central Africa. The minute continues:

Dr. Livingstone mentioned that his operations had consisted almost entirely in the removal of tumours, which were invariably of a benign character, the only exception being one resembling melanosis; that he had never met with cancer or scrofula, calculous disorders, or consumption. He observed that the natives make capital patients, never calling out under the knife as used to be the case in other countries before the days of chloroform. Their treatment of fractures is on the whole very successful. They use the bark of a tree for splints, and, as union is generally rapid, few subsequent deformities are met with. More than once Dr. Livingstone had noticed cases of dislocation which had escaped being reduced. He had not found occasion to perform any of the so-called capital operations of surgery, but among other minor operations he had cured one native lady of squint. Dr. Livingstone alluded with quiet humour to his behaviour towards other practitioners, never condemning their practice before the patient, but taking them aside, when he generally found them very ready to acquiesce in his views of treatment. He also spoke of his fame as an obstetrician, in which branch he had no competitors, being decidedly at the top of the tree. He alluded to one case in which having cured a native lady of some complaint, he or his medicine got all the credit of a child which she bore fifteen months afterwards, so that the celebrity thus acquired was the source of no little inconvenience, as he was supposed to possess a specific.

Dr. Livingstone thinks that although the native prescriptions are often sufficiently absurd, there is reason to believe in the efficacy of some from their being widely known among various tribes, and over vast territories. He has no doubt that many medicines exist in these countries which may yet prove valuable additions to our materia medica. But in the management of febrile diseases the native doctors possess nothing equal to quinine. Dr. Livingstone was in the habit of combining it with an aperient in the form of a pill, which agreed so well with his patients, and became so famous, that had it been in this country it would have eclipsed even Morrison's pill.

This minute, which was doubtless from the pen of Mr. Benjamin Bell, F.R.C.S.E. (father of the late Dr. Joseph Bell), ends with a reflection (a somewhat uncommon thing in minutes) in the following words:

Although the meeting of which we have endeavoured to give a very meagre sketch was not a regular meeting of the Medical Missionary Society, demanding a formal minute, it was certainly a notable occasion in our history, bringing before us a *real* medical missionary, a *true man* raised up by Providence for a great purpose; one of those persons in regard to whom panegyric seems out of place, and who go straight forward to the accomplishment of their work quite independently of either praise or censure. May his short visit be instrumental in awakening all of us to greater earnestness in our several spheres, and to a more thorough sympathy for those families of our race who are still sitting in darkness, without God, and without hope!

DR. LIVINGSTONE'S GRANDSON AND GRANDDAUGHTER.

In connexion with the centenary of the birth of David Livingtone, it is interesting to note that on March 18th, the Livingstonia Committee of the United Free Church of Scotland appointed Dr. Hubert Francis Wilson and Miss Mary Ruth Wilson, grandson and granddaughter of the explorer, the one as a medical missionary and the other as a missionary to Livingstonia, to the station of Chitambo, the place where, it will be remembered, Dr. Livingstone died and where his heart is buried. Dr. Wilson received his medical education at Cambridge and Glasgow, and holds the degrees of B.C. and B.A.Camb.

ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.

At the annual meeting of the above institution, the Chairman, Mr. James Clark, K.C., C.B., referred to the improved accommodation which had been secured for the nursing staff during the year, and to the opening of a special ward for the treatment of ear and throat patients. The annual subscriptions, however, still showed a tendency to fall off, there having been a drop of £200 in 1912; fortunately there had been enough coming in as legacies to meet the increased expenditure; but he thought it was a pity that they were not in a position to pay their way with their annual subscriptions. The Lord Provost referred to the fact that for fifty-four years the hospital had done splendid service in the city, and commended its claims to the liberality of not only the Edinburgh but the Scottish public. Dr. Graham Brown, the President of the Royal College of Physicians, said that it was no light thing that in 1912 over 9,000 children had for the most part benefited, and quite in an extraordinary way, from their treatment at the hospital. They were drawn to the hospital not only from Edinburgh itself but from all over Scotland by the magnetic force of the trained experts on the medical and surgical staff. Further, the hospital served also as a school for the training of medical men in the expert management and treatment of the diseases of childhood.

EDINBURGH ROYAL INFIRMARY.

At their meeting on March 31st, the managers of the Edinburgh Royal Infirmary appointed John Dixon Comrie, M.A., B.Sc., M.D., F.R.C.P.E., an assistant physician to the institution for a period of five years. Dr. Comrie is Lecturer on the History of Medicine in the University of Edinburgh and honorary secretary to the Post-Graduate Courses in Medicine of the university and the Royal Colleges. There were four other candidates. At the same meeting the termination of Dr. George Mackay's term of service as one of the ophthalmic surgeons of the institution was intimated. The managers minuted their high appreciation of the value of Dr. Mackay's twenty-four years of work in the infirmary, and appointed him one of the consulting ophthalmic surgeons thereto.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

TUBERCULOSIS SCHEME FOR COUNTY FERMANAGH.

THE Fermanagh County Council has decided to appoint a whole-time tuberculosis officer, who will be debarred from other medical practice, and whose duties will be largely administrative. It has been suggested that a central tuberculosis dispensary should be established with four observation beds and four branch or district dispensaries. With regard to a sanatorium, the ideal scheme would be for the council to join with several other councils in erecting and administering one such institution; but the Women's National Health Association has bought Rossclare, is turning it into a sanatorium, and has suggested that it should be taken over by the county council. Rossclare stands on high ground on the shore of Lough Erne with no shelter of any kind; so exposed is it that the growth of the few trees around is clipped by the prevailing winds, and some sleeping boxes erected in the sheltered parts of the grounds in the lee of the main buildings were blown down. The soil is stated to be so heavy and impervious that it is impossible during six months of the year to walk about with comfort. There are no facilities for farm work or kitchen gardens. Some fourteen years ago this place was used as a sanatorium, but Dr. Kidd of Fermanagh and three other doctors formerly connected with the sanatorium have expressed the opinion that the site is unsuitable. It appears that there is at present a recommendation that the council should engage 20 beds from the Women's National Health Association at 25s., but it is being urged that it would do more wisely to build a joint sanatorium with some neighbouring county councils.

New South Wales.

[FROM OUR SPECIAL CORRESPONDENT.]

PUBLIC HEALTH ADMINISTRATION.

THE retirement of Dr. Ashburton Thompson from the position of Principal Government Medical Officer and President of the Board of Health after a long and successful official career is announced to take effect in March. Upon his retirement the Department of Health is to be considerably enlarged by the addition of other departments which should have been attached to it long ago. Dr. R. Paton, who at present occupies the position of Inspector of Hospitals and Charities, will be appointed as Dr. Thompson's successor, and this department will in future be attached to the Health Department. By these means the way will be opened up for some important developments. Dr. Paton is the President of the Tuberculosis Advisory Board, and he will thus have a large share in shaping the policy of the Government in regard to tuberculosis dispensaries, and possibly also public dispensaries for persons ineligible for membership of the friendly societies.

THE GOVERNMENT AND PUBLIC HEALTH QUESTIONS.

According to an announcement by the State Premier (Mr. McGowan) public health questions will take a prominent position in the policy of the Government to be enunciated in view of the general elections to be held towards the end of this year. It is announced that provision for maternity cases will be an outstanding feature. Maternity hospitals are to be established in the crowded centres of population, and maternity annexes are to be provided at country hospitals. Where the patient cannot get or be brought to the hospital she is to be visited by a doctor and a nurse wherever practicable. A maternity allowance is also to be provided, but this is not to be a cash payment. The State will simply guarantee the doctor and the nurse certain payment. In every centre doctors and nurses will be available by arrangement with the Government at rates to be fixed. A patient may call in any doctor she pleases. His bill will be guaranteed up to the rate fixed by the department. If the medical man selected happens to be a specialist and demands a special fee the patient will have to pay the difference. The intention is that every case shall receive proper attention either in a well-conducted hospital or at home, and in either case at the expense of the State.

The antituberculosis dispensaries which it is proposed to establish are to be called "Hospitals for the Diseases of the Throat and Chest." The Waterfall Hospital for Consumptives is in future to be called the "Waterfall Sanatorium." Further matters to be taken up are the medical inspection of oversea consumptives, hygiene in schools and Government departments, milk supplies, and accommodation houses for patients who do not care to live in boarding houses. District nursing is also to receive attention. The idea is to use the existing machinery of the hospitals. The various hospital committees have been advised that hospital funds may be legally used in payment of services for nursing patients in their own homes. The hospitals will be paid subsidies on any money raised for the treatment of eligible cases in this way.

This policy has been approved by the Political Labour League which recently held its meetings in Sydney, but it is very doubtful whether the Government will be able to finance this extensive scheme. It shows, however, the general trend of opinion on medical matters, and it is generally believed that before long the profession will have to face the introduction of a national insurance scheme.

TUBERCULOSIS DISPENSARIES.

The tuberculosis dispensary established by the New South Wales Branch of the National Association for the Prevention and Cure of Tuberculosis has been actively at work for the last three months. An important part of the work of the dispensary is the examination of contacts; it is stated that 50 per cent. of those in contact with the patients were found to be infected.

At the Royal Prince Alfred Hospital the question of dealing more adequately with the treatment of tuberculosis has engaged the attention of the medical staff and the board of directors. As a result of a series of conferences between the honorary medical staff and the medical members of the board of directors, it has now been decided to form a special tuberculosis dispensary in connexion with the out-patient department of the hospital. The following is a report of the conference:

The treatment of tuberculosis is no new departure at this hospital, but in the past the cases have been distributed over the various departments. This conference now recommends that a special antituberculosis dispensary be established without delay to deal with tuberculosis as efficiently as possible, on the lines of such dispensaries as the Victoria Dispensary in Edinburgh and the Paddington Dispensary in London. The conference would point out that the hospital has already organization in existence which only needs to be expanded to meet the new conditions of the new department. It also desires to point out that it would be in the best interests of the patients, the public, and the hospital as a teaching institution that such work should be carried out in connexion with a large general hospital. The conference makes the following recommendations:

1. That the aforementioned antituberculosis dispensary should be a part of the outdoor department of the hospital.
2. That if possible separate waiting and examination rooms should be provided.
3. That the department be open for the treatment of patients on two evenings and two afternoons a week, and that the evenings should be reserved exclusively for those who are unable to attend during the daytime, and that definite reasons be given for night attendance.
4. That the work of the department be carried out by a staff of four physicians, selected from the existing staff, assisted by an additional special resident medical officer, who should, if possible, be a senior officer.
5. That two nurses be attached to the department, one for males and one for females, to assist the visiting physicians, to visit the homes of patients, to advise them as to sleeping accommodation, isolation, preparation of food, disposal of sputa, care of utensils, etc., and to bring contacts to the department for examination. Nurses who have been specially trained in hygiene should be employed for this work.
6. That printed instructions be given to each patient as to the disposal of sputa, diet, value of open air and sunlight, the infectious nature of the disease from which they are suffering, etc.
7. That tuberculins and medicines be provided through the dispensary of the hospital.
8. That special observation wards be provided for diagnostic purposes and for temporarily housing patients prior to their removal to the various sanatoriums such as Waterfall, Rookwood, Wentworth Falls, and Thirlmere.

THE SANATORIUM TREATMENT OF TUBERCULOSIS IN NEW SOUTH WALES.

The annual report of the Queen Victoria Homes for Consumptives shows that 93 patients were admitted to the sanatorium for men at King's Tableland during 1912, and 94 discharged. Fifty-one patients were in residence on December 31st, 1911, and 49 on December 31st, 1912. The average number of beds occupied daily was 49. Since the opening of the sanatorium in 1903 over 1,000 patients had been under treatment; 80 per cent. of the patients came from Sydney and suburbs and the remainder from the country. The age of the patients varied from 11 years to 58 years, the average being 30 years. Tubercle bacilli were found in 69 per cent. of the cases. A family history was given in 34 cases. Haemoptysis had occurred in 40 cases before admission, and a previous history of pleurisy in 32. Haemoptysis occurred in 17 patients while in the institution. The number of patients that improved amounted to 79.8 per cent. Five deaths occurred during the year.

During the same period 94 patients were admitted to the sanatorium for women at Thirlmere, and 91 discharged; 40 patients were in residence on December 31st, 1911; 43 on December 31st, 1912. Of 94 patients, 86 came from Sydney and surrounding suburbs within a radius of sixteen miles. The remaining 8 came from various country districts. A family history of consumption was admitted in 32 cases (equal to 35 per cent.), probable in 4 others, and denied in 55. Exposure to infection by contact with tuberculous patients, whether relatives or not, was known to have occurred in 46 cases (equal to 50 per cent.), and probable in 7 others. Four patients gave a history of consumption in the family without exposure to infection as well, while 17 cases with a family history free from tuberculosis gave a definite history of exposure to infection.

Sir Philip Sydney Jones, President of the Board and also of the National Association for the Prevention of

Consumption, in supporting the motion for the adoption of this report, said it was the desire of the Queen Victoria Homes for Consumptives to establish antituberculosis dispensaries, but they were anticipated by the National Association. Referring to the establishment of a dispensary in connexion with the Royal Prince Alfred Hospital, he said that there were many advantages to be gained by the association of a tuberculosis dispensary with a general hospital. The board of the Queen Victoria Homes for Consumptives hailed the establishment of dispensaries as a move in the right direction, for the dispensary was a valuable aid to the work of the sanatorium, as it was very difficult to secure patients in the early curable stages. The labourer would not give up work very often until he had reached a stage when his chances of recovery were almost *nil*. The work of the nurses attached to the dispensaries was most valuable in discovering cases of early infection among the contacts.

Correspondence.

THE FORM AND POSITION OF THE STOMACH.

SIR,—Most teachers of anatomy have come to the conclusion that the definite information concerning the true form and position of the living stomach which is afforded by radioscopic examination can no longer be ignored, and that such knowledge should be used to supplement what the student learns from the dead and distorted stomach in the dissecting-room. In many British schools these shadow pictures of the living stomach are regarded as an indispensable part of the student's instruction in anatomy; for I know that the magnificent series of skiagrams which Dr. A. E. Barclay kindly permitted me to make use of in my department is also being employed in several other medical schools in this country as well as in America.

Under these circumstances it is somewhat disconcerting to the mere anatomist, who imagined, when he introduced the results of radioscopic examinations of the stomach into his instruction, that he was doing his best for the students committed to his care to prepare them for clinical work, to find a distinguished surgeon like Dr. Gray, in the BRITISH MEDICAL JOURNAL of March 29th, practically advising him to shun radioscopy and to pin his faith to the old dissecting-room methods, and the belief in a "middle sphincter" and the immobility of the pylorus.

After the Liverpool meeting of the British Medical Association there was an informal discussion of the whole subject of the form and position of the stomach at a meeting of the Anatomical Society of Great Britain and Ireland, held at St. Mary's Hospital, London, last November, and the impression left upon my mind was the remarkable unanimity of opinion on the part of those anatomists who had seriously investigated this admittedly difficult problem.

The large series of radiograms taken by Dr. Barclay, which have been critically examined in this department by Professor Wingate Todd, seems to prove quite definitely that—

(1) The form and position of the stomach vary with posture.

(2) That in the erect posture the usual form of the normal stomach, when empty of food, is a J-shape, the medial edge of the large left limb (lesser curvature) of which is vertical, and the upper part of its right side is "blown out" to form a bladder (filled with gas above the level of the oesophageal opening) occupying the left cupola of the diaphragm.

(3) That the bend of the J lies as low as the umbilicus; and

(4) That the pyloric extremity is opposite the second lumbar vertebra (or the disc between it and the third), a full vertebra's depth lower than its position when the subject is in the prone position.

I do not think that Dr. Gray's statement of his belief in the presence of a "middle sphincter" is likely to carry conviction at the present time, even though he qualifies the term as being used "for the sake of brevity," and apparently only in reference to "the earlier part of gastric digestion."

The impartial study of a large series of radiograms showing the altered position of the stomach when the subjects are in the prone and erect attitudes respectively leaves no room for doubt that the pyloric extremity of the stomach sinks as much as the depth of a vertebra when the subject arises from the prone to the erect position; and I am told by some of my surgical colleagues that they have found this borne out in their experience of actual manipulation of the pylorus.

I have ventured to enumerate this series of widely admitted facts, because they are based upon the examination of a large number of radiograms of patients, some of whom I was privileged to see Dr. Barclay demonstrate to Dr. Gray some time ago.—I am, etc.,

G. ELLIOT SMITH.

Department of Anatomy, University of Manchester, March 31st.

THE AFTER-EFFECTS OF GASTRO-ENTEROSTOMY.

SIR,—I am sorry that Mr. Gray fails to appreciate that "practically unanimous agreement" was accorded to my opening address on "The Anatomy of the Normal Stomach" at last year's meeting of the British Medical Association. It is true, none the less, that all the radiographers present agreed with me in every detail, and the opinion of anatomists may be judged from the fact that my drawing of the "normal stomach" is being reproduced in the new editions of two of the standard textbooks of anatomy.

Mr. Gray says that he carried out a series of observations on normal stomachs many years ago, and came to certain conclusions. That is the very reason why I recommended him to carry out another series *now*. When I first investigated the stomach with the x rays I was led, in common with Mr. Gray and many others, to erroneous results, owing to our methods being inaccurate. We have all changed our views since then, thanks to increased experience and better technique. Mr. Gray alone seems to be content to ignore recent advances in our knowledge.

Mr. Gray says he was unable to see Dr. A. C. Jordan's work at Guy's Hospital, as I recommended him to do. But did he not, at the suggestion of Mr. A. H. Burgess, of Manchester, recently visit Dr. A. E. Barclay, who, in the presence of Professor G. Elliot Smith, demonstrated to him the normal anatomy of the stomach with the x rays? Both Mr. Burgess and Dr. Barclay tell me that he expressed himself as convinced that Dr. Barclay's views on the subject, which are identical with mine, were correct. May I ask Mr. Gray what new facts have since come to light which have caused him to go back to his old theories of the anatomy and physiology of the stomach, the error of which Dr. Barclay was one of the first to point out?

It is, I fear, useless to explain again the object of my paper on some of the ill results which may follow gastro-enterostomy to one who attempts, like Mr. Gray, to criticize my paper before he has read it, as up to now only a short abstract has been published. I happened, in the course of the last three years, to be consulted by a number of patients for indigestion, which had returned at various intervals after gastro-enterostomy had been performed. I was able to separate from these a group of some 15 cases presenting very similar symptoms to each other; a posterior gastro-enterostomy had been performed upon them by various competent surgeons, in most instances, as I stated in my paper, for duodenal ulcer. As I was fortunate to find the cause of the symptoms, and consequently was able to relieve the patients more or less completely, I ventured to publish the result of my investigations. I really fail to see why this should make Mr. Gray so angry with me, even if he has not yet seen such cases in his own practice.

I also described one remarkable case in which the operation had been performed for pyloric obstruction. If Mr. Gray had waited for the appearance of my paper, he would have seen that here again it is incorrect to say that no mention was made of the condition for which the operation was done. In this case I discovered why little or no relief had followed the operation, and I was able to show how an unsuccessful case could be converted into a successful one. Surely it was worth while publishing it in order that others should be able to recognize and relieve the condition.

The fact that a very large proportion of Mr. Gray's patients are still free from symptoms after the very short interval which has elapsed since they were operated upon, is no reason for neglecting to discover why the unlucky minority are not free from symptoms and how they can be relieved.

Finally, Mr. Gray asks me whether I can offer any other explanation than his "Conclusion 3" for certain figures published in the *Archives of the Roentgen Ray*. As neither I nor any one to whom I have shown his letter have been able to understand the meaning of Conclusion 3, my answer must be in the negative.—I am, etc.,

London, W., March 31st. ARTHUR F. HERTZ.

IMMEDIATE OPERATION IN APPENDICITIS.

SIR,—The letters on immediate operation for appendicitis come from two main branches of the profession, hospital surgeons and general practitioners. As I happen to combine these two functions I can, perhaps, see more clearly the difficulties of each.

With few exceptions all surgeons advise early operation, and any other standpoint seems to me astounding. Very many general practitioners still remain to be persuaded, some because they lack experience of the results of early operation, others, like Dr. Hunt, because, while they approve in theory they hesitate in practice, as they think the difficulties in some cases are insurmountable. I hope to show that they are not, except in the most exceptional circumstances.

May I first give my comparatively small experience as a surgeon, and then speak from the standpoint of the general practitioner?

I have operated on about 150 cases of all sorts, from the very earliest to those with large abscesses or spreading peritonitis. I have not lost one case where the disease was localized to the appendix, and all these have run a quick, uncomplicated course to recovery. Of the remainder, two cases of spreading peritonitis and one with a large abscess died. The later cases, such as those with large abscesses, have always had a longer illness, two with such serious complications as empyema.

The mortality of early cases is *nil*, that of all cases is 2 per cent. Surely these figures support the plea for immediate operation? The price paid for this policy of immediate operation is that I have "looked and seen" a normal appendix five times, but with the compensation that the correct diagnosis was made without serious injury to the patient.

Now for the difficulties of the general practitioner. In my experience, especially in the early hours of the disease, when the general practitioner alone is responsible, the diagnosis may be extremely difficult. By the time the surgeon has been called it is often much easier, although possibly still very doubtful. Dr. Hunt puts forward two other difficulties—the expense and the time lost from business. My contention is that they are not as real as Dr. Hunt thinks. Many capable surgeons can be found to operate for small fees. Then as to the time required for recovery, may I quote my last four early cases operated on in private?

1. A soldier, who returned to his regiment feeling perfectly fit within a month.
2. A gentleman farmer, who began to walk about his farm and superintend on the fourteenth day, and was hunting, without permission, on the twenty-eighth.
3. A young lady, who comfortably walked two miles on the fourteenth day.
4. A schoolboy, who went home well within a fortnight.

All four were able to leave the nursing home in ten days or less.—I am, etc.,

Guildford, March 30th. ERIC W. SHEAF.

PHYSICAL SIGNS OF MYOCARDIAL INVOLVEMENT.

SIR,—I note with pleasure that Dr. Thomas Lewis accepts the *a–c* interval of the polygraph tracing as a satisfactory index of auriculo-ventricular conductivity. The observations to which he refers in such kindly terms have been chiefly directed to the measurement of this interval at various stages of cardiac rheumatism; whether when published they will be as convincing to others as they have been to myself remains to be seen, but the fact stands that it is only by such routine examinations that the precise state of conductivity in cardiac rheumatism can be determined.

Dr. Alexander Morison's interesting letter scarcely concerns me except where he says I impute chronic myocardial disease to a series of bacterial insults. My view of the course of cardiac rheumatism is not quite as he reads it. As I say in the letter which appeared in your issue of March 15th, I regard the direct effect of the inflammatory spots on the myocardial functions as probably small. The course of cardiac rheumatism is one of repeated acute invasions between the ages of 6 and 20 or thereabouts; each of these invasions causes direct but temporary injury to the cardiac muscle, and direct permanent injury to the valves and pericardium. At or soon after the patient has passed the age at which he is prone to these direct insults to his myocardium—supposing, that is to say, that his heart has survived these frontal attacks—the mechanical effects of the valvular and pericardial injuries begin to tell on the cardiac muscle, which at length breaks down. I gather from Dr. Morison's letter that this is in most respects his own view of the course of the disease.—I am, etc.,

Clifton, Bristol, March 31st. CAREY COOMBS.

BOVINE AND HUMAN TUBERCULOSIS.

SIR,—In the BRITISH MEDICAL JOURNAL for January 11th there is a letter by Dr. T. Readman in which he states that the "poorer classes in China do not suffer from tuberculosis."

Where this idea originated I do not know, but it is not a fact.

All forms of tuberculosis exist in South China, the commonest being tuberculosis of the lung, of the glands of the neck and of the joints and spine. The only form of tuberculous disease I have not yet met with is *lupus*, which is very rare. The disease in its various forms follows the same course as in England, and the only form of the bacillus I have seen is the "human" type.—I am, etc.,

J. PRESTON MAXWELL, M.D., F.R.C.S.

Yungchun, viâ Amoy, China, Feb. 21st.

ALIMENTARY TOXAEMIA.

SIR,—In Professor Saundby's recent contribution[1] to the discussion on alimentary toxaemia at the Royal Society of Medicine he writes, on p. 544, that "Oxaluria or oxalaemia may be fairly reckoned to be of alimentary origin, for oxalic acid is introduced preformed in the food, or is the product of carbohydrate fermentation in the stomach which may occur when the hydrochloric acid is deficient."

This statement is not only difficult to understand, it is almost as surprising as if it had been asserted that the uric acid responsible for gout were formed in the stomach. If oxalic acid, and therefore oxalates, are produced by gastric fermentation, how is it that crystals are never found when the elements resulting from an Ewald test meal, for instance, are subjected to microscopic examination? What biological chemist, indeed, ever thinks even of looking for them?

Mr. Mackenzie Wallis's observation on indicanuria in conditions of mental depression, referred to on p. 542 by Dr. Andrewes, is interesting, but can scarcely be said to be very new. To general practitioners who, like myself, have constant recourse to the French semeiological method of urinary analysis, where the specimen examined is compared to a standard urine, this fact has been familiar for many years. I may add that exophthalmic goitre is the pathological condition where perhaps the largest quantity of indican is present in the urine.—I am, etc.,

Nice, March 20th. A. W. GILCHRIST, M.D.

MIND CURES.

SIR,—Although your able leader under the above heading is by no means the first word spoken officially in this country in favour of rational psycho-therapy, it cannot be said that the medical profession is quick to respond to the advice of its leading organs in this particular. For some years our foremost medical journals have urged upon us the necessity of regarding seriously the phenomena that may be conveniently grouped under the heading of "mind

[1] BRITISH MEDICAL JOURNAL, March 15th.

cures," and of endeavouring to formulate a scientific system of practical treatment that will enable them to make use of the principles evidently at work in such examples of mental therapeutic action. But in spite of this we are faced with the lamentable circumstance that, at the present time, there is in London no systematized instruction for would-be students of psycho-therapeutics, no official demonstrations of treatment by suggestion, hypnotism, and allied processes, and no centre of research in this branch.

On the other hand, it appears that there are still many medical practitioners who refuse to accept either the reality of "mind cures" or the necessity of including the procedures of suggestive therapeutics in our approved schedule of remedial agents. Not infrequently there is open hostility to everything connected therewith. But where treatment by suggestion and its congeners is objected to, there must be definite grounds for objection; then, Sir, let us hear from individual objectors their reasons for antagonism, that they may be answered by those who are accustomed to "mind cures" as a routine part of their practical work.—I am, etc.,

London, W., March 21st. EDWIN L. ASH, M.D.

EARTH-EATING.

SIR,—The notes on geophagy in the JOURNAL of February 1st, p. 254, are very interesting. It is or has been a widespread custom. Humboldt relates that the Ottomacos have this pernicious habit. He saw at Banco, on the banks of the Magdalena, Indian women who were employed in pot-making, eating clay from time to time. Auguste de S. Hilaire observed earth-eaters in Brazil, near Fazenda de Macauba, and amongst the Machucalis; several of the latter died in consequence. In the south of the Province of Saint Catherine many men and women were victims to this habit, preferring the clay of which white ants made their dwelling. The taste for earth-eating was so strong that slaves who were muzzled rolled themselves in the dust in their endeavours to suck in particles of earth. The Prince of Wied-Neuwied observed earth-eaters on the coasts of Brazil. De Castelnau saw geophagy in Eastern Bolivia. The habit has also been noticed in the Antilles, in Jamaica, Hayti, Porto Rico, St. Thomas, St. Martin, Guadeloupe, Martinique, St. Domingo, in Guiana, Peru, Louisiana, Alabama, Georgia, Florida, and South Carolina. Hindu and Chinese women have been known to eat meerschaum, and pregnant women in all countries have been known sometimes to have resort to geophagy. In some countries "rock butter" (native alum) is eaten. Hermbstaedt saw quarrymen in Thuringia spread this rock butter on their bread. In some parts of Russia they used to eat gypsum with their bread.

Closely allied to this geophagy seems to me to be the imbibition of earthy particles (involuntarily, of course) in drinking waters, which in some cases may be the cause of endemic goitre. There is no doubt that the use of muddy waters is frequently associated with this disease. Siminon relates, for instance, that the waters of Rosières-aux-Salines and those of the goitrous localities of the valley of the Seille are often muddy. The same fact was noticed at Bussières-les-Belmont by Lacordaire, in the Jura by Ogérien, in Würtemberg by Dürr. The drinking water which flows down a mountain-side must necessarily contain a large amount of suspended earthy matter, and Mead, the celebrated English physician, attributed the enormous goitrous tumours amongst the inhabitants of the Alps to mineral particles in their drinking water.

Julius Caesar Scaliger wrote:

In eâ parte agri Taurini quae Valdocca (vallis anseris) appellatur, multis gula turgida fit, Penè omnes et amentes et inepti ad loquendum (cretinism and deaf-mutism).

Hoffmann was of the same opinion:

Struma oritur ex aquarum potu quae graves sunt et copiosam terram recondunt.

I am aware that goitre is now supposed to be due to an organism, but it is possible and probable that the nature of the waters may have something to do with the development of a specific organism.

Penrith, Feb. 3rd. LOUIS E. STEVENSON, F.G.S.

THE NEGLECT OF VACCINATION.

SIR,—Dr. Killick Millard's first letter, speaking of "the medical officer of health rather than the public vaccinator," "sanitary reform," "public health measures," seemed to imply methods of dealing with small-pox without recourse to vaccination. It is satisfactory to learn from his letter of March 17th that medical attendants and nurses and contacts in Leicester are vaccinated, and it is immaterial to the benefit of the community whether they are vaccinated by public vaccinators or by other practitioners. I hold to my conviction that "sanitary reform" and "public health measures" fail to diminish susceptibility to small-pox, and this is supported by the fact that Dr. Killick Millard has experienced in Leicester nineteen outbreaks of small-pox—a liberal, even generous, number for objectors to vaccination to inflict on themselves *and* their neighbours.

I advocate maintaining "an army of public vaccinators and vaccination officers and medical inspectors and all the expensive machinery of public vaccination," not "for the sake of vaccinating a few contacts in the rare event of an outbreak of small-pox," but in order to continue the present facilities for vaccination throughout the year, which are used by hundreds of thousands; the man in the street and his children have the same right as Dr. Killick Millard's family to vaccination, which he admits "as a scientific operation for conferring complete but temporary immunity against small-pox was never in a stronger position than it is in to-day"; if public vaccination were discontinued I fear the difficulties of controlling outbreaks of small-pox would increase until they became insuperable.

Public vaccination is not very expensive to the nation, public vaccinators and vaccination officers being usually paid by small fees for the cases with which they deal, not by salary, and medical inspection being a part of the work of the Local Government Board's medical officers and included in their salaries, the real burden and grievance is maintaining small-pox hospitals and their staffs—a natural sequel to allowing objectors to vaccination to practise free trade in small-pox.—I am, etc.,

Brent Knoll, March 22nd. J. W. PAPILLON, M.R.C.S.

The Services.

SANITARY TRAINING OF THE TERRITORIAL FORCE.

MAJOR FREEMAN has summarized in the *Journal of the Royal Army Medical Corps* the results of sanitary training in the Territorial Force, and the lessons to be learnt so far as sanitation is concerned from five years' experience of Territorial camps throughout the country. It is satisfactory to learn that, although still far from perfect, sanitation has made great strides during these past five years, and that the general standard is high. Two factors, he considers, handicap the training: the paucity of trained regimental medical officers, and the absence of an organized sanitary squad. The superior attraction of work with a field medical unit accounts mainly for the first factor, and the remedy suggested is the training of every medical officer with a field ambulance in his first year of service. With regard to the sanitary squad, men do not readily enlist for such duties as fall to its lot, and when the work has to be done by fatigue parties and defaulters a highly trained quartermaster who can properly supervise it is absolutely essential. Major Freeman would do away with the "water duty" men as such, and in a country where a good water supply is generally available there is something to be said for this. The men would be of much more service as hospital or sanitary orderlies, and in some such capacity they are generally employed. The sanitary company as at present arranged is "merely an expensive and wasteful luxury," and the suggestion is to transfer to it the medical duties of the Royal Engineers, so that it would have a great and useful future before it. The duties which it is suggested this reorganized sanitary company should deal with are:

1. Sanitary field engineering.
2. Water supply on a large scale.
3. Preservation and storage of food.
4. Epidemics and infectious outbreaks.
5. Disinfection on a large scale.
6. Sanitary disposal of dead animals and men.

And concrete examples are given of the work which it would perform in the mobilized Territorial Force. This reorganization would involve "all N.C.O.'s having a sanitary qualification, and, if possible, be sanitary inspectors in civil life; the officers must all be medical officers of health, some must hold specialist qualifications."

In this way a very valuable unit might be formed. For Territorials Major Freeman insists that "camp sanitation" is not of much value, as in a war such as they are organized for buildings will be used where possible and tents not at all.

The weakest spot in the organization is considered to be in connexion with the clearing hospital, which will be formed by voluntary aid detachments of the Red Cross Society, for the *personnel* cannot get the necessary training in sanitation. The suggested remedy is the formation of a nucleus for the clearing hospital from the R.A.M.C.T., each nucleus consisting of an officer and fifteen men.

The proposals put forward are worthy of careful consideration, coming from an officer of wide experience. Certainly, as he points out, the time is now ripe for some readjustment of the work between the R.E. and the R.A.M.C.; it is impossible that the existing system could stand the test of mobilization.

Universities and Colleges.

UNIVERSITY OF ABERDEEN.

Degree.

AT a meeting of the Senate on March 26th, the degree of LL.D. (*honoris causâ*) was conferred on William Stephenson, M.D., F.R.C.S.Edin., Emeritus Professor of Midwifery in the University.

The following received ordinary degrees and diplomas on the same occasion:

M.D.—*B. J. Alcock, *F. Macrae, *A. F. Wallace, W. Ainslie, J. Ritchie.

M.B., CH.B.—†L. W. Bain, †W. P. Mulligan, G. A. E. Argo, W. Baxter, R. M. Boyd, R. W. Brown, W. M. Fowler, A. R. Grant, F. M. Griffith, J. Humphrey, J. Jaffé, J. G. Johnstone, A. C. W. Knox, W. McCombie, A. J. McCreadie, A. G. McLean, J. R. MacNeill, F. C. Merrall, L. J. Moir, J. Proctor, A. L. Robb, B. T. Saunders, J. S. Stewart, F. G. Stuart, A. A. Turner, J. T. Watt, J. L. D. Yule.

D.P.H.—J. Chalmers, G. Leggat, P. M. Rennie, Captain, I.M.S., J. M. Taylor.

* Honours for thesis. †Second class honours.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B.—*Elementary Anatomy and Biology, Chemistry, and Physics:* H. J. Dingle, H. A. Lake, W. I. F. Powell. *Elementary Anatomy and Biology:* P. V. Anderson, E. F. H. Bell, J. S. Clark, E. C. Dunlop, A. I. Humphreys, C. G. Irwin, T. Kirsopp, H. M. Leete, R. S. Millar. *Chemistry and Physics:* Stephanie P. L. H. Daniel, C. T. Helsham, D. Henegan, D. E. Hearn, P. Hickey, M. C. Joynt, C. D. Newman, H. Sterne-Howitt, I. Soliman. *Elementary Anatomy:* F. R. Sturridge.

SECOND M.B.—*Anatomy and Physiology:* R. N. Craig, J. A. Charles, L. B. Frere, H. K. Graham-Hodgson, G. Irving, *A. E. Raine, A. Smirthwaite, B. Sergeant, A. C. Taylor, R. Welch.

THIRD M.B.—*(All Six Subjects):* *C. H. Keay, P. A. Clements, A. C. Freeth, C. S. P. Hamilton, F. W. Harlow, W. Herbertson, Ah Chit Jap, C. W. Morris, G. D. Newton, H. A. P. Robertson, E. K. Ryan, D. C. Scott, C. G. Strachan, A. G. Taylor, E. J. Tyrrell. *(Four Subjects):* E. Bramley, A. G. Macfarlane, A. Patterson.

* Awarded second class honours.

QUEEN'S UNIVERSITY OF BELFAST.

THE following candidates have been approved at the examinations indicated:

FIRST M.B.—*Physics:* J. F. Ainley, G. V. Allen, D. D. Anderson, Annie E. E. Beattie, B. R. Clarke, Janie Clarke, Jane Copes, J. Craig, Margaret Crawford, Marion Crawford, W. Cupples, J. W. Gaston, W. Gilmore, C. Graham, F. Hopkins, T. F. Ingram, D. L. Ireland, S. M'C. Kirk, J. Lascelles, S. Lees, J. C. Loughridge, H. H. M'Clelland, J. M'Cormack, A. M'D. M'Mullan, P. Macarthur, J. P. O'Kane, J. E. Rea, M. H. Turnbull, H. W. Wild, C. J. A. Woodside. *Chemistry:* J. F. Ainley, D. D. Anderson, Annie E. E. Beattie, T. M. Boyd, J. C. Carson, B. R. Clarke, Janie Clarke, J. Craig, Margaret Crawford, W. Cupples, Dorothy I. Dobbin, J. Dunlop, J. W. Gaston, C. Graham, F. Hopkins, T. E. Ingram, D. L. Ireland, J. Lascelles, S. Lees, J. C. Loughridge, Olga R. I. Love, J. M'Cormack, A. M'D. M'Mullan, P. Macarthur, T. J. Marner, R. G. Meyer, J. P. O'Kane, Annie M. Orr, W. Saunderson, M. H. Turnbull, H. W. Wild, C. J. A. Woodside. *Zoology:* J. Adams, J. Boyd, J. H. Davison, C. A. W. Ramsay, T. Wallace. *Botany:* S. T. Alexander, C. Barton, J. Boyd, Marion Crawford, F. Ewart, J. G. M. Leyden, B. W. M'Kinney, M. O'Kane, C. A. W. Ramsay, J. Scott, T. Wallace.

SECOND M.B.—*Anatomy and Physiology:* Eileen M. Bell, D. Corry, C. F. Davey, Mary E. Henry, J. W. McKee, J. R. M. MacKenzie, F. P. Montgomery.

THIRD M.B.—*Pathology, Materia Medica, Medical Jurisprudence, and Hygiene:* H. T. Chatfield, T. P. McQuaid, S. A. D. Montgomery.

FINAL.—S. Acheson, S. R. Armstrong, E. S. Dixon, L. D. I. Graham, J. R. Henry, J. V. Holmes, F. Jefferson, B. C. Letts, H. H. C. Lynch, S. McComb, J. McFadden, E. McSorley, I. W. Magill, W. M. O'Farrell, J. Patrick, J. H. Porter, A. E. H. Reid, H. V. Walsh.

M.A.O.—H. B. Steen.

D.P.H.—*Both Parts:* T. Arnold.

IT is stated that a Pasteur Institute is to be established in St. Louis, under the direction of Dr. R. B. H. Gradwohl. It is to be conducted on the lines of the New York Pasteur Institute.

Obituary.

ALFRED LEWIS GALABIN, M.A., M.D., F.R.C.P.,

CONSULTING OBSTETRIC PHYSICIAN TO GUY'S HOSPITAL.

WITH the death of Dr. Galabin on March 25th there has passed away a prominent member of the medical profession whose name has been for many years intimately associated in the minds of all of us with that science and practice of midwifery which he has so ably expounded.

Alfred Lewis Galabin was born at Grove Lane, Camberwell, on January 10th, 1843, and was the last of an old Huguenot family directly descended from Jean Galabin, whose château was at Joncquières, near Orange in Provence. This Jean Galabin fled from his estates when the Edict of Nantes was revoked in 1685, and eventually settled at Greenwich under William III, whose princedom had been at Orange near Jean's birthplace. One of his descendants was bridgemaster to the City of London and had his official residence in Tooley Street near the hospital which his great-grandson was afterwards to enter. A. L. Galabin's father was a civil servant who lived at Camberwell and was married to Margaret Woods. Her father was descended from a Quaker family, and lived at Tapley, Bishopsteignton, the house to which his grandson eventually retired and in which he died, having taken the house fifty years after his grandfather left it.

After a few years spent at a private school in Camberwell, Galabin entered Marlborough in 1857, where he remained under the headmastership of Cotton, afterwards Bishop of Calcutta, and Bradley, the famous Dean of Westminster. In 1862 he went up to Trinity College, Cambridge, as a minor scholar, and had those rooms in Nevile's Court which were afterwards converted into guest chambers for Royalty and other distinguished visitors. He was one year junior at Trinity to Lord Alverstone and Lord Rayleigh. In 1864 he won a major scholarship on his College Foundation, and in 1866 achieved the great distinction of a "Double First," being placed twenty-first Wrangler in the Mathematical Tripos, and bracketed ninth in the First Class of the Classical Tripos. His college awarded him the Wrangham Medal for his first-classes in the two triposes and in every college examination. He soon started working at the elementary medical subjects, and in 1868 was elected Fellow of Trinity at the same time as Sir Frederick Pollock, the eminent jurist. He proceeded M.A. in the next year.

In 1869 he entered Guy's Hospital, a contemporary of Mr. W. H. A. Jacobson; having been at the university, he ranked as a third year's student, and so went straight into the wards, where he was under Cock and Cooper-Forster, Wilks, Pavy, and Moxon. He took the diploma of M.R.C.S. in May, 1872, and the degree of M.B.Camb. in June of the same year. In 1873 he held the appointments of house-physician and resident obstetric assistant, and took the degree of M.D. In this year he first began to write, and his mechanical bent and mathematical training showed in the subject which he chose. In the *Journal of Anatomy and Physiology* he discussed the dynamic causes of the secondary waves of the pulse, and he also published a pamphlet on the Connexion of Bright's Disease with Changes in the Vascular System. These were followed by many papers in the *Guy's Hospital Reports*, and other publications on the sphygmograph and its tracings, the value of which to the clinician he was one of the first to point out. He invented one form of the cardiograph, and demonstrated it before the Lord Mayor at a meeting at the Mansion House.

There is no doubt that at this period his intention was to practise as a physician and not as a gynaecologist, but fate ruled otherwise. He had been appointed assistant physician at Great Ormond Street, and had applied for a vacancy which had occurred among the physicians of the Middlesex Hospital, when he was, in February, 1874, offered the appointment of assistant obstetric physician at Guy's, vacant by the sudden death of Dr. J. J. Phillips, who had only been appointed assistant five years before. He accepted the post, and thus determined his career, though at that time nobody expected that the retiring and rather bookish young man would develop into the eminent surgeon and brilliant operator that he afterwards became.

He had no period of tedious waiting such as has often fallen to the lot of consultants; as soon as he had finished his resident appointments he was placed on the staff of this big London hospital, and was fully embarked on the career of a gynaecological specialist.

He was convinced that a gynaecologist should be trained as a surgeon and not as a physician, and lived to see his speciality removed from the domain of medicine into that of surgery.

In 1874 he married Harriett Mignon, daughter of the Rev. H. G. Baily, incumbent of Swindon from 1847 to 1900, who was descended from a Huguenot refugee settled at Plymouth in 1700. Thus both husband and wife were of Huguenot ancestry. They took up their residence at 14, St. Thomas's Street, which house they shared with Dr. le Gros Clark, one of the surgeons to St. Thomas's Hospital. In the same year Dr. Galabin became M.R.C.P.Lond. He continued publishing papers on his pulse tracings, but soon began to secure an extensive gynaecological practice, and his writings subsequently followed his speciality. In 1876 he published in the *Guy's Hospital Reports* his first report of the Guy's Hospital Lying-in Charity, in which he analysed with consummate skill a series of 23,591 consecutive cases of labour, a series which he so often quoted to such good purpose in his *Manual of Midwifery* written ten years later.

He was now placed on the Council of the Obstetrical Society, and in 1878 was elected Fellow of the Royal College of Physicians, as soon as he was eligible for election.

He resigned his assistant physicianship at Great Ormond Street, and in 1882 was appointed full obstetric physician at Guy's on the retirement of Braxton Hicks. In 1884, when practice was increasing, he moved to 49, Wimpole Street, where he lived for twenty-five busy years until his retirement from practice. He held all the offices in the Obstetrical Society—librarian, secretary, treasurer—and was president for 1889–90, a year for which he also held office as president of the Hunterian Society. He now had a very large practice, and became one of the leading English obstetricians. He was examiner in obstetrical medicine at Oxford, in midwifery at London, and in midwifery and diseases of women at Cambridge. He once examined at all three universities in the same year; he also examined at the Conjoint Board and for the University of New Zealand. He edited the *Obstetrical Journal* for some years.

In 1903 he retired from the staff of Guy's under the age limit, and was appointed consulting obstetric physician. He continued to practise until, in 1909, he finally left London and went to live at Tapley, Bishopsteignton, a house with a beautiful garden in South Devon, which he had leased as a week-end residence since 1898. Even here he occasionally saw patients, and was willing to assist in difficult cases at the local hospital.

He was a member of the British Medical Association, and was Vice-President of the Section of Obstetric Medicine of the annual meeting in 1887, when it met in Dublin, and President of the Section in 1892 at Nottingham.

As a consultant Dr. Galabin was very successful; he was most careful and thorough in his examinations, and soon won the confidence of all his patients. He was methodical and kept elaborate case-books. As an operator he was brilliant, and always kept abreast of the times in his technique. When he first began operating antisepsis has just been introduced, and he lived to see it superseded to a great extent by aseptic methods, which he adopted.

But it is by his books that he is known, and it is by his books that his name will be remembered. Galabin's *Midwifery* has been read by a multitude of medical students in England for the last twenty years—the combination of gynaecologist and mathematician enabled him to reduce midwifery almost to the domain of an exact science. His easy style and command of English enabled him to write a very readable book, in which the descriptions of all the various fetal movements during labour are mechanically sound. The book, which he modestly called a *Manual of Midwifery*, was first published in 1886; the seventh edition, in which he was assisted by Dr. George Blacker, was considerably enlarged, and was published under the title of *The Practice of Midwifery* in 1910. This work was widely read abroad, was translated into Italian and Greek (1895), and is still regarded as the standard textbook on the subject. His other most important book was *Diseases of Women*, first published in 1879, of which a sixth edition was issued in 1903. The late Matthews Duncan once said, "Everything Galabin says is worth listening to, everything Galabin writes is worth reading twice."

In manner he was very quiet and reserved, and, though he had read and thought deeply on most subjects, it was difficult to get him to talk thereon or to utter the opinions he had formed. He would often listen to a voluble talker for some time, and then utter a quiet remark—prefaced by a modest "I suppose"—which completely summed up the matter, and often put it in quite a new light. He was a staunch moderate Churchman; in politics he was originally an old-fashioned Liberal, but became a Unionist when that party split up. He never espoused Tariff Reform, and called himself latterly a keen Unionist Free Trader. He was very fond of music but no musician.

His health was never robust even in childhood, and his aunt's diaries still extant contain many entries of the poulticings and nursings of "little Lewis." In 1886 he had his first attack of tachycardia, and was then found to have valvular disease; the attacks were frequently repeated, but he was able to go through two necessary but severe operations, and for the last two years of his life his heart gave him hardly any trouble.

He was a very good chessplayer, and was a member of the Four-handed Chess Club from its foundation in 1885. He was very fond of travel, and went abroad nearly every year, at first with college friends, and later with wife and daughter. He was a devotee of the mountains, but had not the physical strength necessary for mountaineering. He was a good walker, and had walked over all the great Alpine road passes. He was a member of the Hellenic Travellers' Club. A camera and a botanist's vasculum were always carried on his walks, and, in fact, botany was his great hobby. He always loved a garden but never had any opportunity of enjoying one until he went to Tapley in 1893, and then his happiest days were spent in his garden planning new beds and restocking old ones. Fresh supplies were always brought back from his Continental tours, so that he had in profusion cyclamens from Monte Generoso, shrubs from the Dauphinée, and ranunculi from Cannes. As a neighbour (an old Guy's man) said: "If I show Galabin anything new in my garden, he scribbles it on his shirt cuff and the plant is soon flowering in his garden." He loved flowers, and this month, when he heard in Sicily that the flowers in England were much earlier than usual, he turned homewards sooner than he had intended, and hurried across Europe to see his daffodils at Tapley before they were over. He only went once round his garden; pneumonia set in, and he died after five days' illness, under the shadow of a spreading cedar that his grandfather had planted. He was buried at Bishopsteignton on March 29th in a grave lined with his own daffodils, and the service was read in the church in which his mother and father had been married. He was a man of noble simplicity and most straightforward character, but one of those quiet thinking men whose powers are perhaps never fully revealed to their associates, and of whom, therefore, no adequate appreciation can ever be recorded; but in this instance the power of the man can perhaps hardly be more forcibly shown than by saying that, while his bent seemed to be all in the direction of original physiological investigation of the diseases of the circulation, finding his way in medicine barred for the time, he accepted the opportunity offered to him of an obstetric appointment, and thenceforth devoted himself entirely to the special and very alien branch of work.

Few could have been bold enough at his outset to suppose that under his somewhat slender and delicate-looking frame there existed the nerve and determination sufficient for a successful surgical career. Yet it was so; and Galabin had the reputation of being a bold, a careful, and a very successful operator in all the major operations of obstetric surgery, while his kindly and gentle manner inspired confidence in his patients, and was greatly appreciated in a sick room.

Of his home life one need only say he was fond of

home, fond of seeing his friends, who soon found out that, although at first he might seem somewhat impenetrable, he was generally ready to say something worth listening to on most subjects that came up for discussion by the way. And by those who knew him well he will be remembered and regretted.

He leaves a widow and one daughter, who is married to Mr. Harold Michelmore, the well-known West Country tennis player.

ROBERT HUNT, M.R.C.S., L.R.C.P.,

CONSULTING SURGEON, BLACKBURN AND EAST LANCASHIRE INFIRMARY.

DR. ROBERT HUNT, one of the best known and most highly esteemed practitioners in Lancashire, died at his residence at Blackburn on Wednesday, March 19th. He had been in perfect health and was playing golf on the previous Saturday; next day pneumonia commenced and threatened from the very beginning to prove fatal. This fact was only known by those in immediate touch with him, so that his death was a shock as well as a cause of the deepest regret to the community.

Robert Hunt, a member of a well-known Lancashire family, was born at Preston in 1856, and after completing his general education at the Grammar School in the same town became a student at Owens College, Manchester. Subsequently he spent a year or two in London, and became M.R.C.S. in 1877, and L.R.C.P. in 1882. He held various resident appointments at the Manchester Royal Infirmary and the Monsall Fever Hospital, and finally settled down to practice in Blackburn. He was appointed to the honorary staff of the Blackburn and East Lancashire Infirmary, and remained an active worker on the surgical side until some three years ago, when he was appointed honorary consulting surgeon. He was also medical referee to the county court, a certifying surgeon under the Factories Act, and a public vaccinator. A man of exceptionally fine physique, Dr. Hunt was an all-round sportsman in the very best sense of the term. As a young man he was a renowned exponent of Rugby football. For several years in succession he was an International player; indeed, he and two of his brothers created a record in this connexion, for they were all three International players in the same year, Dr. Hunt being English three-quarters back and his brothers playing in the same team as forwards. In his later years he was an active member, and for a long time captain, of the Pleasington Golf Club, and up to a comparatively recent period had been a good shot. His other characteristics are well described in the following note from one of his colleagues:

> "Bob," as he was affectionately spoken of by his friends, had one outstanding characteristic. This was a diffidence about his achievements as an athlete or as a surgeon. No one ever heard him speak of his days as a Rugby International, or of his prowess on the golf links and with the gun. As a surgeon he possessed in a marked degree good judgement, and his manipulative dexterity was the envy of his colleagues. He was specially good at plastic work, and took great pleasure in operating for harelip and ruptured perineum. As a golfer he was the most difficult man in the club to beat, as he never gave in while the faintest possibility of winning remained.

In ambulance work Dr. Hunt also took much interest; indeed, the local branch of the St. John Ambulance Association practically owed its origin many years ago to his energies. The parent body, the Order of St. John of Jerusalem, made acknowledgement of this by appointing him an honorary associate, and the post of examiner was one of those that he held at the time of his death. He was also a member of the Preston and Blackburn Division of the British Medical Association. His death leaves a blank both in the professional and social life of Blackburn which will prove difficult to fill. He was married, and is survived by his wife and by two sons.

WE have to record the death, on March 30th, at the age of 58, of Mr. ALFRED CHUNE FLETCHER, of the Charterhouse, where he was resident medical officer to Sutton's Hospital. He was the son of a journalist in Hereford, and received his early education at the Grammar School in that city. He became a student at St. Bartholomew's Hospital in 1877, obtained the diploma of M.R.C.S.Eng. in 1881, and was house-surgeon to the hospital. In addition to the appointment by which he was best known he was medical officer of the Merchant Taylors' School, and had earned the confidence and esteem of many patients and friends in all parts of the country. We have received from a lay correspondent a tribute to his memory, in which, after deprecating any desire to estimate his attainments as a medical practitioner, he writes: "Perhaps you will allow me to refer to what in my opinion constituted a greater merit than any professional skill, and that is the great hold which as a man and as a superior he had, by his gentleness, consideration, and scrupulous regard for the self-respect of others, managed to acquire upon the affections and regard of those subjected to his authority while resident medical officer at the Charterhouse. Remarkably kind as he was to the fairly considerable staff of attendants and nurses that worked under him, helping them with many a kind action, his merit showed forth most conspicuously in his conduct towards the pensioners, not a few of whom had previously lived in good positions. Not every one in authority would have been equally careful to avoid wounding their self-respect by harsh or haughty conduct. Dr. Fletcher never did so, and the result is, I find, a genuine, grateful regard retained for his memory, such as would have gratified him could he be made aware of it, and such as shows that kindness and consideration under circumstances such as his are not thrown away." A member of the profession who signs himself "A. E. P." adds that he had known Mr. Chune Fletcher for over twenty years, and could truthfully say, "We shall not see his like again."

WE regret to announce the death of Dr. MICHAEL AHERN, of Brosna, co. Kerry, after an illness of some weeks. He had been in charge of the Brosna and Knocknagashel Dispensary Districts for more than a quarter of a century, and was one of the most popular medical men in Kerry.

SURGEON-GENERAL T. J. MURPHY, late A.M.D., who died on March 10th, aged 82, obtained the diploma of L.R.C.S.I. in 1852, entered the service in April, 1854, was promoted Surgeon in 1865, Surgeon-Major in March, 1873, Brigade Surgeon in November, 1879, and Deputy Surgeon-General in May, 1882. He retired with the honorary rank of Surgeon-General in September, 1884.

DEPUTY INSPECTOR-GENERAL G. SAUNDERS, C.B., died on March 6th at Tunbridge Wells, aged 89. He took the diploma of M.R.C.S.Eng. in 1845 and became M.D.Aberd. and M.R.C.P.Edin. in 1872. He joined the service in December, 1845, becoming Surgeon in 1854, Surgeon-Major in 1865, and retired in February, 1871, with the honorary rank of Deputy Inspector-General. He served in the Crimea, was present at the battles of Alma and Inkerman, the capture of Balaclava, and the siege of Sebastopol. He was mentioned in dispatches and was awarded the medal with three clasps and the Turkish medal. He was senior medical officer at Hong Kong during the fever epidemic in 1865 and was mentioned in dispatches and awarded the C.B.

Public Health.

POOR LAW MEDICAL RELIEF AT BURNLEY.

THE Burnley *Express* has published a report of a recent meeting of the Burnley guardians, when letters were read from the Burnley Division of the British Medical Association and the Poor Law Medical Officers' Association of England and Wales protesting to the Local Government Board against the proposed scheme for furnishing medical relief in the area of the union. The Local Government Board asked for the comments of the guardians. The letter from the Burnley Division was as follows:

> I am instructed by the Committee of the Burnley Division of the British Medical Association to request the consideration of your honourable Board to the dispute of the district medical officers of the Burnley Union—a matter which was brought to your notice by a letter from me dated December 9th, 1912.
>
> It will be within your knowledge that the whole of the nine district medical officers of the union resigned their positions, having failed to obtain what was considered by them and by the medical men in the district adequate remuneration, or remuneration which was equal to that paid in similar surrounding unions. An increase of stipend was offered to some of the district medical officers in June last, but even with this increase the amount was still inadequate. As a counter move the guardians have decided

to divide the union into fifteen medical areas instead of nine as heretofore, and have dismissed all the public vaccinators with the object of utilizing the fees for vaccination towards eking out the small salaries to be paid to the district medical officers. My Committee desires to inform you that in December last the Mayor of Burnley met the district medical officers and officers of the Burnley Division, and kindly offered, if agreeable to them, to approach the guardians with a view to a settlement of the dispute. This was gladly agreed to by the medical men but refused by the guardians.

Various points were then put forward, namely, that the present board of guardians would shortly vacate office; that no good reasons had been given for the proposed divisions and the dismissal of the public vaccinators; that even with the increase of payment proposed, the remuneration in the Burnley area would fall far short of that paid in adjoining unions; that the salaries proposed in the various new districts did not correspond with the work likely to be required; and that the making the district medical officer a public vaccinator in his own district greatly conduced to underpaid Poor Law work.

The letter of the Poor Law Medical Officers' Association pointed out that the comments by the Burnley Guardians on its last letter had in no wise answered the points raised by it against the proposed arrangements, and submitted further criticism, similar to that of the local profession. Special stress was laid on the undesirability of allotting the public vaccination of every Poor Law medical district to the district medical officer. In some cases it might be convenient and unobjectionable; but to divide a union like Burnley into fifteen distinct vaccination districts was a proceeding so unusual as to demand explanation. This, it was stated, had not been forthcoming.

The guardians resolved unanimously to make no comments on the above letters. This, no doubt, was the easiest course, but whether it will commend itself to the Local Government Board remains to be seen. That body by sending down the letters evidently considered that the former comments of the guardians on the previous letters were insufficient. In all the circumstances we cannot but agree with the Council of the Poor Law Medical Officers' Association, "that the *impasse* that has arisen imperatively calls for investigation of the conditions under which medical relief is being administered in the Burnley Union."

Medical News.

A MOVEMENT has been started to commemorate the visit of His Majesty King George to Aden by the erection of a female hospital, the want of which has long been felt.

DR. JAMES DEVON, Medical Officer to H.M. Prison, Glasgow, has been appointed a Prison Commissioner for Scotland, in the place of the late Mr. Thomas Robertson.

THE International Association of Medical Psychology and Psychotherapy will hold its annual meeting at Vienna on September 18th and 19th, immediately before the opening of the Congress of German doctors and scientists.

THE King has granted permission for Captain Robert G. Archibald, M.B., R.A.M.C., to accept the Imperial Ottoman Order of the Medjidieh of the Fourth Class conferred upon him by the Sultan of Turkey in recognition of valuable services rendered.

THE Lord Chancellor has added the names of fifty-seven gentlemen to the Commission of the Peace for the County of London. Among the names are those of the following members of the medical profession: Sir Thomas Boor Crosby, Dr. W. J. Frankish, Dr. Wheeler-O'Bryen, and Dr. T. Rushbrooke.

THE third tour organized by the Voyage d'Études Médicales will start on August 25th, and will include visits to watering places and climatic stations in the south-west of France, beginning with Arcachon, Dax, and Biarritz, and concluding with Bagnères-de-Luchon on September 6th. Further particulars can be obtained from Dr. Carron de la Carrière, 2, rue Lincoln, Paris.

ON the strength of a recent epidemic of ophthalmia at the Park School, Hanwell, the State Children's Aid Association has addressed to each member of the various boards of guardians concerned a letter urging that this "unnatural gathering" should be broken up. Had these children, it is suggested, been cared for in small groups on the family plan, the primary case or cases would have been more readily detected and much unnecessary suffering avoided.

THE competition in mothercraft, which we announced as in prospect some months ago, is to take place on the afternoon of Saturday, April 12th, at the Infant School in Charing Cross Road. This is the last day of the "health week" which has been organized by the National League for Physical Education and Improvement; the competition has been arranged through the affiliated Association of Infant Consultations and Schools for Mothers. The names of a hundred competitors have been entered from sixteen different centres, and the contest between them promises to be keen. Apart from individual prizes to competitors, a challenge shield will be awarded to the centre securing the highest aggregate number of marks. Admission to view the competition will be by ticket, price 1s. Early application should be made to the Secretary of the Association, at 4, Tavistock Square, since only a limited number are available.

A PLAN for the establishment of a sanatorium for tuberculosis in the province of Shantung, one of the most thickly populated parts of Central China, has been approved by the English and American missions which have united for purposes of medical education, and by the council of the Shantung Christian University. As far as is known, there is at present no public institution in China intended solely for the treatment of tuberculosis. The need for such a sanatorium is shown by the fact that 30 per cent. of the patients in some of the mission hospitals suffer from tuberculosis.

AN illustrated pamphlet descriptive of the tours to Norway and the northern capitals arranged for the coming summer by the Royal Mail Steam Packet Company can be obtained on application to the company's offices in Moorgate Street. The vessel set apart is the *Arcadian*, one of nearly 9,000 registered tonnage, equipped as a yacht, and supplied with various modern conveniences, such as bedsteads instead of berths, and a swimming bath and gymnasium. The cruises will vary in length from thirteen to twenty days, the rates ranging from £1 a day upwards.

A DEPUTATION from the Eugenic Education Conference recently held in London had an interview with Mr. Trevelyan, Parliamentary Secretary to the Board of Education, on April 2nd, asking that an inquiry should be held as to the advisability of encouraging the presentation of the idea of racial responsibility to students in training and children at school. The deputation, which was headed by Major L. Darwin, President of the Eugenics Education Society, and including the Head Master of Eton, Mr. Nicholls (ex-President of the National Union of Teachers), the Dean of St. Paul's, and Miss Tuke (Principal of Bedford College), stated that it was not desired that eugenics should be an extra subject in the curriculum, or that it should be required to be taught by unwilling teachers, but it urged that the training college curriculum should be adapted to include the biological and physiological knowledge on which a eugenic ideal could be based, and that the subject should be approached from the evolutionary standpoint. Mr. Trevelyan said that the board, while unable to make sex hygiene or eugenics a compulsory subject of instruction in elementary schools or training colleges, recognized the importance of the matter, and had no wish to discourage experiments in teaching on those lines.

LORD LONSDALE, in an appeal on behalf of Charing Cross Hospital, makes reference to the strenuous efforts of the managing body during the last eight years to place the institution on a sound financial basis. It is greatly to their credit that within that short space of time they have reduced the debt by £35,000; but—unhappily there is always a big But in such appeals—there remains a balance of £62,000 still to be paid. In addition to that sum money is required for further improvements, amongst which are the opening of a free children's ward, and the reopening of five closed wards as pay wards. At present young children have for lack of room to be placed in the adult wards, much to the discomfort of the other inmates, and also of the sufferers themselves. The pay wards are intended for persons who are unwilling to accept charity and yet unable to afford surgeons' fees and the expense of a nursing home. The charge is to be two guineas a week, payment which will cover whatever operative measures may be necessary. The privilege of admission to these wards will, it is stated, be strictly limited to persons of moderate incomes. To pay off the outstanding balance and to defray the cost of these contemplated improvements a total sum of £70,000 is required. Lord Lonsdale's appeal is addressed particularly to the theatrical and sporting community. Owing to its situation the hospital receives a large number of patients connected with theatres, and all patrons of the drama may therefore be expected to take a keen interest in the institution. The Charing Cross Hospital has behind it a fine record of excellent work for the benefit of the sick poor and for the advancement of medical science, and it is to be hoped in the interest of suffering humanity that the development of its field of usefulness will not be hampered by lack of means.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INTERMITTENT GLYCOSURIA.

DR. J. L. THOMAS (Brynmawr) writes: Mrs. X., aged 47, a multipara, and still regular in menstruation, complained of much pruritus pudendi, and the usual symptoms of glycosuria in women of that age. There was a history of extreme and habitual constipation, but of good health until the present symptoms began. As she was menstruating, and no sample of urine was then procurable, she was provisionally put on laudanum, alkalis, and full doses of nux vomica. The usual instructions with regard to diet were given. The first sample of urine—morning, fasting—had specific gravity 1010 and no sugar. It was pale and cloudy, and contained bacilli of the *coli* group. A sample for the afternoon of the next day was of specific gravity 1030, and contained much sugar. She has in three weeks much improved with treatment, but urine after fasting and after meals showed the same results, although the amount of sugar is much reduced. Is the glycosuria of chemical or bacterial origin?

INCOME TAX.

M.B. joined a partnership a year ago without buying any book debts. The income tax assessment for the year is £471, but the actual profits of the firm £290 only. He has borne his share (four ninths) of the tax on £471, and asks what his remedy is.

*** If our correspondent's income from all sources does not exceed £400 he can in any case claim repayment of tax on £160 upon application to the local surveyor of taxes. With regard to the amount of the assessment on the firm's profits, this is not excessive if the profits, including the year's outstanding book debts, amount to this sum. M.B.'s profits for the year cannot be calculated only by reference to the cash receipts in the first year, since he has become entitled also to his share of the book debts arising in the year. No adjustment of the gross assessment can be obtained unless the profits of the practice as a whole have been less than the assessment, owing to the change of partnership or some other specific cause; if they have been less than the assessment application should be made to the surveyor of taxes for adjustment on this ground.

PATHOGNOMIC.

WE regret that by an oversight we have left the following letter from Dr. E. A. Constable (West Green, N.) unnoticed. Under date January 8th he wrote: May I ask which *English* dictionary is responsible for "pathognomic"? (BRITISH MEDICAL JOURNAL, January 4th, Epitome of Current Medical Literature, para. 6, "Ligneus Phlegmon."). The Spanish alone seems to uphold it. Gr., παθογνωμονικος; It., *patognomonico;* Sp., *patognomico;* Fr., *pathognomonique* (Worcester's Dictionary).

*** The form "Pathognomic" is given in the *New English Dictionary on Historical Principles* (Oxford, Clarendon Press). It is stated to be from the "false form" παθογνωμικος, which is described as equivalent to "pathognomonic." The following examples of the use of "pathognomic" are given in that *Dictionary*:—*Bonet's Merc. Compit.*, VI, 185: "The Pathognomick Symptome of this Disease, and that which first invaded the Patient" (1766). Charles Darwin's *Emotions*, VIII, p. 205 (1872): "Constant tremulous agitation . . . pathognomic of the earlier stages of general paralysis.)" "Pathognomical" is used in the same sense by T. Goodwin in *Trial Christian's Growth* (1643): "such symptomes are Pathognomicall and proper and peculiar to them." In the *Edinburgh Review*, July, 1874, p. 198, occurs the phrase: "With the advance of power of pathognomical expression coincides a certain loss of grandeur." "Pathognomy" occurs in Good's *Study of Medicine*, fourth edition, I, p. 546 (1822-23). The form may be defended on the ground of convenience of pronunciation, and it has an analogue in "physiognomic," = physiognomonic, from the Greek φυσιογνωμονίω. There are other instances in medical terminology of shortening up words. We need only instance formic acid, which on strict etymological principles should be "formicic" acid (*formica*).

ANSWERS.

THALATTA.—Oleate of mercury was, we believe, introduced as a cleanly and efficient substitute for mercury ointment to produce mercurialization by inunction. The mercury oleate ointment, *B.P.* (1898), consists of mercury oleate 1 part, benzoated lard 3 parts. The *Extra Pharmacopoeia*, fifteenth edition, p. 558, contains formulas for oleatum hydrargyri 10 per cent., oleatum hydrargyri 10 (per cent.), cum morphina (1 in 60) and oleatum hydrargyri liquidum. The first two contain 10 per cent. of yellow mercuric oxide, the last mentioned 5 per cent. The rubbings are usually weighed up in grease-proof paper of weight 10 to 30 grains, or the equivalent of the liquid preparation may be employed.

UNDERFEEDING.

DR. BINNIE DUNLOP (London, S.W.) writes: The report on the diet of the labouring classes which has just been issued by the Physiological Department of Glasgow University reveals, as you say, that "there must be a large percentage of the people in Glasgow to-day who cannot obtain the bare minimum in the way of food." Is this to be wondered at in view of the prevailing ignorance of parental prudence among the poor, and of Mr. Seebohm Rowntree's authoritative estimate that, if expended with the utmost scientific care, a weekly wage of 23s. 8d. would only provide the bare necessaries of life for a family of three children? It is surely time that, on humanitarian, eugenic, and political grounds, we recognized the fact that few urban wage earners can do justice to more than two children. Vital statistics show that falling birth-rates are accompanied by falling death-rates, and that they will continue to be so until the latter have reached the normal—about 10 per 1,000 per annum, as in New Zealand. At present, therefore, the principal aim of medical officers of health should be the abolition of underfeeding. So I beg to submit my opinion that there are only two genuine propositions, and but one practicable one, for the abolition of underfeeding—either (1) that every adult wage-earner should receive from the State an additional so many shillings a week for each child he may have; or (2) that the poor should be encouraged to beget no more children than they can themselves afford to maintain properly.

LETTERS, NOTES, ETC.

BRUDZINSKI'S SIGN.

IN the review of the fourth edition of Dr. Louis Fischer's *Diseases of Infancy and Childhood*, published in the BRITISH MEDICAL JOURNAL of March 22nd, p. 617, it was said that Brudzinski's sign in meningitis was there first mentioned in a textbook written in English. The fact that the sign was described in Dr. Cautley's *Diseases of Infants and Children*, published in 1910, was overlooked.

SUNSHINE IN 1912.

DR. HY. DRAPER BISHOP, States M.O.H. (Guernsey), writes: The past year (1912) seems to have been in the British Isles very gloomy, with but little sunshine. As has often happened before, Guernsey holds the record for 1912 with 1,704 hours of sunshine. The year was, however, the least sunny on record here, the average of past years having been 1,905 hours.

A LARGE DOSE OF VERONAL.

DR. A. GOLDNEY CHITTY (Highgate, N.) writes: On March 8th I was called to a man, aged about 40, who, presumably about 6.30 the previous evening, had swallowed 125 grains of veronal. It was not discovered till 10 a.m. the following morning, when his bedroom door was forced open. I saw him about 10.45, and I washed out the stomach thoroughly. As I was not quite sure that he had not had some opium as well, I washed it out with potassium permanganate in addition, finishing with the administration of hot coffee and a couple of beaten up eggs through the stomach tube. With six hourly injections of strychnine $\frac{1}{30}$ grain, the constant inhalation of oxygen, and rectal feeding, I had the satisfaction of bringing him round, but he remained quite unconscious till the morning of March 11th. Now that the authorities have put veronal on the scheduled list of poisons, it seems a great pity they did not at the same time make it obligatory for no chemist to supply it without the prescription of a medical man.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.